

## Condensed Transcript

Deponent: George P. Smith, Ph.D. (05/14/02)

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<p>1 IN THE UNITED STATES DISTRICT COURT 2 FOR THE DISTRICT OF WASHINGTON, D.C. 3 MORPHOSYS AG, ) 4 Plaintiff, ) 5 vs. ) Case No. 1:00CV00146 6 CAMBRIDGE ANTIBODY TECHNOLOGY ) 7 LIMITED, ) 8 Defendant. ) 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <p>VIDEOTAPED DEPOSITION OF GEORGE P. SMITH, Ph.D., a witness, produced, sworn, and examined on Tuesday, May 14, 2002, between the hours of 11:00 a.m. and 6:00 p.m., at the law offices of Davis, Susan and Holder, 1001 Cherry Street, in the City of Columbia, County of Boone, State of Missouri, before</p> <p>Sally Bredeman Harmon, CCR BREDEMAN &amp; ASSOCIATES, INC. 311 Jackson Street Jefferson City, Missouri 65101</p> <p>and a Notary Public within and for the State of Missouri, commissioned in Cole County, Missouri, on the part of the plaintiff, pursuant to notice.</p> <p style="text-align: center;">1</p>	<p>1 INDEX 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <p>Page</p> <p>George P. Smith, Ph.D. .... 8 Examination by Mr. Harth. .... 107 Examination by Mr. Vezeau ..... 180 Re-Examination by Mr. Harth ..... 188 Signature ..... 189 Reporter's Certificate ..... 190 Certificate of Costs ..... 190</p> <p>EXHIBIT INSTRUCTIONS:</p> <p>Smith Deposition Exhibits Nos. 1 through 24 were retained by the reporter and are attached to the original transcript; copies were made and attached to Mr. Vezeau's copy of the transcript. Defendant's Deposition Exhibits Nos. 313 through 321 were retained by the reporter and are attached to Mr. Vezeau's copy of the transcript; copies were made and attached to Mr. Harth's copy of the transcript. Photocopies of Pope Deposition Exhibit No. 2, Kay Deposition Exhibits Nos. 20 and 24, and CAT 30(b)(6) Deposition Exhibits Nos. 22 and 26, and McCafferty Deposition Exhibit No. 13 were retained by the reporter and are attached to the original transcript; copies are attached to Mr. Vezeau's copy of the transcript. SIGNATURE INSTRUCTIONS: Signature requested; presentment waived; to be obtained by the reporter.</p> <p style="text-align: center;">3</p>
<p>1 APPEARANCES 2 3 For the Plaintiff: 4 DAVID J. HARTH 5 Attorney at Law 6 1666 K Street, NW, Suite 300 7 Washington, D.C. 20006 8 tel: 202-912-2000 9 fax: 202-912-2020 10 PAUL M. BOOTH 11 Attorney at Law 12 101 Orchard Ridge Drive, Suite 300 13 Gaithersburg, Maryland 20878 14 tel: 301-721-6100 15 fax: 301-721-6299 16 For the Defendant: 17 TIMOTHY J. VEZEAU 18 JANE J. CHOI 19 DAVID W. CLOUGH, Ph.D. 20 Attorneys at Law 21 Katten Muchin Zavis Rosenman 22 525 West Monroe Street, Suite 1600 23 Chicago, Illinois 60661-3693 24 tel: 312-902-5200 25 fax: 312-902-1061 For the Deponent: PHILLIP J. HOSKINS Counsel University of Missouri System Office of the General Counsel 227 University Hall Columbia, Missouri 65211 tel: 573-882-3211 fax: 573-882-0050 Also Present: RUFUS R. HARMON Certified Legal Video Specialist</p> <p style="text-align: center;">2</p>	<p>1 EXHIBITS 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <p>Marked</p> <p>Smith Deposition Exhibits:</p> <p>No. 1 - Letter dated 4/24/02 to Smith from Paul Booth (1 p); subpoena to deponent with attachments (6 pp) 10 No. 2 - Discovery documents M020816, M020817, and M020818: Article from Science Magazine, "Filamentous Fusion Phage: Novel Expression Vectors That Display Cloned Antigens on the Virion Surface" (3 pp) 24 No. 3 - Discovery documents M011617 through M011629: Article from Gene Magazine, "Antibody-selectable filamentous fd phage vectors: affinity purification of target genes" by Stephen F. Parmley and George P. Smith (13 pp) 30 No. 4 - Grant application dated 11/1/1988 for Filamentous fusion phage (18 pp double-sided) 39 No. 5 - Individual National Research Service Award Application, dated 2/2/89, for A Paratope Library (11 pp) 40 No. 6 - Summary Statement from Allergy and Immunology Study Section, meeting date Feb/Mar 1989 (5 pp) 42 No. 7 - Discovery documents M020789 - M020792: Paper by Skerra and Pluckthun entitled "Assembly of a Functional Immunoglobulin Fe Fragment in E. coli," published in "Science." (4 pp) 49 No. 8 - Discovery documents M080543 - M080552: Application for Continuation Grant, request for the year 3 and would summarize progress in year 2 (10 pp) 51</p> <p style="text-align: center;">4</p>

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5 No. 10 - Fax transmission cover sheet dated 1/22/91 sent to Carlos Barbas from Smith (1 pp); printout of an ELISA plate reader (1 p)	57	5 No. 319 - Discovery documents M011705 - M011706: Letter dated 6/27/97 to Dear Colleague from Smith (2 pp)	165
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7 No. 11 - Document contained in a manila folder entitled "Banbury Conference 4/90": Handwritten notes for talking points (2 pp), and outline for talking points (1 p)	72	7 No. 320 - Discovery document 90 003254 - 90 003256: Facsimile cover sheet dated 3/25/98 to Jackson from Walton (1 pp); Letter dated 3/24/88 to Sean from Persson, with attachment (2 pp)	171
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16 No. 15 - Discovery documents M081888 - M081895: Summary of poster exhibit presented at Miami Winter Symposium 1/90 (8 pp)	83	16 Pope Deposition Exhibit:	
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18 No. 16 - Interoffice memo dated 1/5/89 from Bird to "Distribution" (1 p)	87	18 No. 2 - Discovery documents CM009441 - CM009516: DHHS Grant Application from Smith (76 pp)	
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20 No. 17 - Confidential Disclosure Agreement, dated 1/5/89, between Smith and Genex (2 pp)	90	20 Kay Deposition Exhibits:	
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## 1 PROCEEDINGS

2 MR. HARTH: Appearing for the manufacturer,  
3 MorphoSys: David Harth and Paul Booth.

4 MR. VEZEAU: And on behalf of Cambridge  
5 Antibody Technologies, I am Tim Verzeau. And with me are my  
6 colleagues Jane Choi and Dr. David Clough of the firm of  
7 Katten Muchin Zavis Rosenman.

8 MR. HOSKINS: And my name is Philip J.  
9 Hoskins. I appear here this morning on behalf of Marvin  
10 Wright, who was also subpoenaed to bring some documents at  
11 this time. I will state for the record that we have filed  
12 objections with Ms. Choi prior to the stated date and time  
13 for the production and that those objections have been  
14 timely filed with Ms. Choi, raising certain objections to  
15 the document request served upon Mr. Wright, the general  
16 counsel of the university.

17 Also in my capacity as an attorney with the  
18 Office of the General Counsel, I am appearing here today on  
19 behalf of the witness, Dr. George P. Smith.

20  
21 GEORGE P. SMITH, Ph.D., being sworn by the Certified  
22 Reporter/Notary Public, testified as follows:

23 EXAMINATION BY MR. HARTH:

24 Q. Please state your full name.

25 A. George Pearson Smith,

9

1 Did you receive this letter and this subpoena?

2 A. I'm sure I did. Yes, I did.

3 Q. And you'll note that attached to the subpoena  
4 there is an Exhibit A which contains a list of various  
5 documents that have been requested of you in connection with  
6 this deposition. Do you see that?

7 A. Yes. Exhibit A, yes.

8 Q. Have you searched through your files and produced  
9 to counsel for both sides documents that you believe are  
10 responsive to this document request in Exhibit A?

11 A. Yes, I have. I've -- most of them, at least.

12 Q. All right.

13 A. I have attempted to get what I have in my files.

14 MR. HARTH: And it's my understanding, Mr.  
15 Hoskins, that there are a few documents that originally were  
16 contained in Dr. Smith's files which the University of  
17 Missouri is asserting a privilege?

18 MR. HOSKINS: Well, I would say that the  
19 privilege is being asserted by Dr. Smith --

20 MR. HARTH: All right.

21 MR. HOSKINS: -- and by the university. I  
22 will identify those documents in some summary fashion for  
23 the record.

24 One document is a letter from Jorge Goldstein  
25 dated 10/8/91, the attorney who was prosecuting the patent

11

1 THE WITNESS: Do you want "Pearson"?

2 THE REPORTER: P-e-a-r-s-o-n?

3 THE WITNESS: That's correct.

4 BY MR. HARTH:

5 Q. Where do you live, Dr. Smith?

6 A. 228 East Parkway Drive in Columbia.

7 Q. Columbia, Missouri?

8 A. Columbia, Missouri.

9 Q. How are you currently employed?

10 A. I am a professor at the University of Missouri in  
11 Columbia.

12 Q. In what department?

13 A. Division of biological sciences.

14 MR. HARTH: I'm going to ask you to mark  
15 this, please.

16 MR. VEZEAU: David, are you marking these as  
17 Smith exhibits?

18 MR. HARTH: Uh-huh.

19 (SMITH DEPOSITION EXHIBIT NO. 1 WAS MARKED  
20 FOR IDENTIFICATION BY THE REPORTER.)

21  
22 BY MR. HARTH:

23 Q. I'm going to hand you, Dr. Smith, what the court  
24 reporter has marked as Smith Deposition Exhibit 1, which is  
25 a letter, and attached to that letter is a subpoena.

10

1 application. That letter is to George Smith, one of the  
2 co-inventors of the invention for which the patent was being  
3 sought.

4 The second is an undated handwritten note,  
5 appears to be from Dr. Smith to Connie -- the last name  
6 isn't given; I believe that to be Connie Armentrout -- the  
7 university patent administrator at the time, detailing a  
8 conversation that Dr. Smith had with me as counsel for the  
9 university regarding a research contract being negotiated  
10 between the university and an entity known as Genex  
11 Corporation.

12 The third is a memo, dated 5/16/90, from  
13 Connie Armentrout to me, Phillip Hoskins, as the attorney  
14 for the university, asking certain legal questions regarding  
15 terms and conditions of that contract under negotiation.

16 The fourth item is a memorandum from Connie  
17 Armentrout to George Smith, dated June 5, 1990, detailing  
18 her conversation with me about the terms and conditions of  
19 the proposed research agreement between Genex Corporation  
20 and the University of Missouri.

21 As to those four items, they were contained  
22 originally in the files of Dr. Smith. The university and  
23 Dr. Smith are asserting an attorney-client privilege as to  
24 those documents.

25 MR. HARTH: Mr. Hoskins, I would ask that you

12

1 retain those four documents for the -- at least for the near  
2 future so that they will be accessible if either side or  
3 both sides cares to pursue the matter through the court.  
4 MR. HOSKINS: I will represent for the record  
5 that I have received your request, intend to follow it, and  
6 will retain those four documents in my files so that if a  
7 court subsequently orders production of those documents, we  
8 may do so.

9 MR. HARTH: Thank you. I appreciate that.

10 MR. VEZEAU: May I clarify one date?

11 MR. HOSKINS: Sure.

12 MR. VEZEAU: On the first document that you  
13 identified, Phil, that you are withholding on the basis of  
14 privilege, you said the date was 10/8/91. Do I understand  
15 correctly that the date is the 8th of October of 1991?

16 MR. HOSKINS: That's correct. It is October  
17 8, 1991.

18 MR. VEZEAU: And that's the letter from Jorge  
19 Goldstein to Dr. Smith?

20 MR. HOSKINS: That's correct. And I might  
21 add that there is a voluminous attachment to that two-page  
22 letter that I believe also is covered by the attorney-client  
23 privilege in that it is communications either to Dr. Smith  
24 from Goldstein or comments from doctor -- from Goldstein to  
25 Dr. Smith, either of which would be covered by the

13

1 privilege, it's our position.

2 MR. VEZEAU: Would you please identify the  
3 nature of those documents attached to the letter?

4 MR. HOSKINS: It's a -- the document is  
5 entitled "Comments on Continuation In Part of Serial Number  
6 07/680,009" filed April 2, 1991. I haven't counted the  
7 pages, but it certainly is multiple -- a multiple-page  
8 document. It may in fact be a duplicate of the original  
9 letter and attachment. But I'm going to estimate it's about  
10 a half-inch thick. If you'd like to number the pages, we  
11 can do that.

12 MR. VEZEAU: No, but can you tell us how many  
13 pages were comments by Dr. Smith as opposed to materials  
14 sent to Dr. Smith?

15 THE WITNESS: You might have a hard time  
16 doing this.

17 MR. HOSKINS: If I could have a moment --

18 MR. VEZEAU: Sure, absolutely.

19 MR. HOSKINS: -- to confer with Dr. Smith, I  
20 think I can.

21 MR. VEZEAU: Sure.

22 THE WITNESS: It looks like the --

23 MR. HOSKINS: We'll do it quietly off the  
24 record.

25 MR. HARMON: We're off the record?

14

1 MR. VEZEAU: (Nodding head.)

2 MR. HARTH: Why don't we go off the record.  
3 (Discussion off the record.)  
4

5 MR. VEZEAU: Back on the record.

6 MR. HARMON: We're back on record.

7 MR. HOSKINS: Okay. This is Phil Hoskins.

8 I'd like to state for the record, I have examined closely  
9 the October 8, 1991, letter from Jorge Goldstein to Dr.  
10 Smith and attachments thereto. The total pages of the  
11 attachments to that two-page letter are five pages prior to  
12 a document entitled "Title of the Invention," stamped  
13 "Draft," and which contains a total of 63 pages, including  
14 the exhibits at the end.

15 Dr. Smith is going to now tell you on what  
16 pages of that attachment "Title of the Invention" his  
17 comments appear.

18 THE WITNESS: Page 1, page 2, page 3, page 8,  
19 page 9, page 11, page 12, page 13, page 14, page 15, page  
20 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 29. There  
21 are two page 29s. So there are two page 29s, both of which  
22 have comments on them. Page 30, page 31, page 32, page 34,  
23 page 35, page 36, page 38, page 39, page 40, page 42, page  
24 43, page 45, 46, 47, forty --

25 MR. HOSKINS: That has no page number, I

15

1 guess, but it's figure 1.

2 THE WITNESS: -- figure 1 following page 52,  
3 figure 4 following page 52. And that's all.

4 MR. HOSKINS: And for further clarity of the  
5 record, I'd like to state that although the numbers I gave  
6 you previously were assuming that the pages were  
7 sequentially numbered and there were not duplicate pages,  
8 that appears not to be the case. There are some duplicate  
9 page numbers and there are some page numbers that seem to be  
10 omitted throughout the document, so that the total of the  
11 attachments to that October 8, 1991, letter may be slightly  
12 different from those indicated previously.

13 MR. HARTH: Thank you, Mr. Hoskins.

14 Do you have anything further at this time,  
15 Mr. Verzeau?

16 MR. VEZEAU: No.

17 MR. HARTH: Let me ask you a couple of  
18 follow-up questions so we can try to get this housekeeping  
19 all out of the way at the beginning.

20 Mr. Hoskins, has the university produced any  
21 additional documents in compliance with the subpoena that  
22 was served by Cambridge Antibody Technology?

23 MR. HOSKINS: It has produced no documents  
24 today. It has, as I indicated earlier, submitted in a  
25 timely manner, objections to that subpoena raising certain

16

1 objections.  
2 I believe, as to some of the categories of  
3 items in the subpoena, there will be no responsive documents  
4 within the possession, custody, or control of the  
5 university.

6 As to others, there will be some documents  
7 that are responsive, some of which will be privileged in the  
8 nature of attorney-client privilege; others of which may be  
9 privileged in the sense of they may contain trade secrets or  
10 other confidential information of a research, development,  
11 or commercial interest to the university. But those  
12 documents do exist.

13 As to item 4 of the subpoena served upon Mr.  
14 Wright -- that's Marvin E. "Bunky" Wright -- I will say that  
15 item No. 4 is a very broad and expansive request, the exact  
16 nature of the documents responsive to which we don't yet  
17 known and it will take a considerable period of time to  
18 gather those documents.

19 MR. VEZEAU: I believe you indicated off the  
20 record that you thought that might take a couple of weeks?

21 MR. HOSKINS: Yes, that's correct. If we're  
22 ordered to produce those and have to go to the time and  
23 expense of doing that, I think it will take a couple of  
24 weeks before the documents can be gathered, reviewed, and  
25 identified as those privileged documents that exist in that

17

1 MR. VEZEAU: Thank you.

2 MR. HARTH: As to the non-privileged  
3 documents that are responsive to items 1, 2, and 3, when  
4 will those be produced?

5 MR. HOSKINS: Well, again, we've objected to  
6 the entire subpoena. Those -- I have no plan right now to  
7 produce those documents until such time as either an  
8 agreement is reached with counsel for Cambridge Antibody  
9 Technology or until such time as a court orders us to do so.  
10 BY MR. HARTH:

11 Q. And, Dr. Smith, have you brought any additional  
12 documents with you today?

13 A. Beyond what the -- I showed you yesterday, no. So  
14 you've seen all the documents that I have produced in  
15 response to the subpoena.

16 Q. All right. How old a man are you?

17 A. 61.

18 Q. How long have you been a professor at the  
19 University of Missouri?

20 A. Since 1975.

21 Q. Did you happen to bring a CV with you today?

22 A. No.

23 Q. Do you have a CV?

24 A. Yes.

25 Q. Would you be agreeable to providing both counsel

19

1 document.

2 MR. VEZEAU: My understanding was you were  
3 going to take a look in the areas that you felt they would  
4 be found, and do a reasonable search. Are you saying now  
5 that you're not going to do that?

6 MR. HOSKINS: As to items 1, 2, and 3 of the  
7 subpoena, I believe that's already been done.

8 MR. VEZEAU: Okay.

9 MR. HOSKINS: We have done a reasonable  
10 search. We believe we have the documents either in  
11 combination with what Dr. Smith has produced that arguably  
12 might be within the possession, custody, and control of the  
13 university, and from other offices of the university.

14 As to item 4, it's so broad and expansive,  
15 we have done no search of those -- for those documents,  
16 believing it could not be accomplished by today's date for  
17 production of those documents, and opted instead to file the  
18 objections.

19 MR. VEZEAU: Are you going to do a search?

20 MR. HOSKINS: I think that remains to be  
21 seen. I'm not making a commitment to do that broad and  
22 expansive search unless we can reach some agreement on  
23 narrowing it or somehow subsidizing the expense involved for  
24 the university in doing such a search or pursuant to a court  
25 order that says we should do that.

18

1 with a copy of that CV --

2 A. Yes.

3 Q. -- when we're through with the deposition?

4 A. Yes.

5 Q. Are you an inventor on any issued patents?

6 A. Yes.

7 Q. Can you identify those patents?

8 A. I am an inventor on -- I don't know what the title  
9 is, but it's a display of conopeptides on phage. So it's an  
10 issued patent. And I am afraid I didn't bring the patent  
11 number.

12 Q. All right. So there's -- that's one patent?

13 A. Yes.

14 Q. And that's the only one?

15 A. I believe that's the only one.

16 Q. Who is Jorge Goldstein, to your understanding?

17 A. He's an attorney for the -- attorney for the  
18 company, Enzon, that was pursuing the patent originally  
19 filed by Genex Corporation for single-chain antibodies --  
20 display of single-chain antibodies on living organisms. I'm  
21 not sure exactly what their wording was, but it was a patent  
22 application that arguably could be phage display of  
23 antibodies, could cover that field.

24 Q. At some time were you named or added as an  
25 inventor on that enzyme application?

20

1 A. Yes, I was. I was -- I don't know what the legal  
2 term was, but the invention was enlarged in some way to  
3 include me as a co-inventor.  
4 Q. And was it your belief that Mr. Goldstein was  
5 representing you personally in connection with that enzyme  
6 application?  
7 A. Me personally? No. I think he was representing  
8 the company.  
9 MR. VEZEAU: Would you, David, clarify what  
10 company?  
11 BY MR. HARTH:  
12 Q. What company are you talking about?  
13 A. Enzon.  
14 THE REPORTER: Do you know how to spell that,  
15 Doctor?  
16 THE WITNESS: E-n-z-o-n.  
17 BY MR. HARTH:  
18 Q. Dr. Smith, I'm going to hand you a document that  
19 was previously marked as McCafferty Deposition Exhibit 13,  
20 the first page of which is a copy of the cover page of a  
21 book entitled "Phage Display of Peptides and Proteins, A  
22 Laboratory Manual."  
23 Are you familiar with that book?  
24 A. Yes.  
25 Q. What was your connection with the book "Phage

21

1 making modifications to one of the coat protein genes of  
2 filamentous phage called gene III. And because that coat  
3 protein seemed to tolerate many large modifications, I  
4 thought that it would be possible to put some foreign piece  
5 of protein from some completely different source into that  
6 coat protein so that it was displayed on the surface of the  
7 filamentous phage.

8 And there -- I -- there was a suitable vector that  
9 had encoded a foreign protein being worked on in that  
10 department. And I took a piece from that vector that  
11 encoded a part of that foreign protein; start with a couple  
12 of pieces --

13 THE REPORTER: Are you saying "foreign"  
14 protein?

15 THE WITNESS: Foreign protein. Foreign.

16 BY MR. HARTH:

17 Q. Do you remember what that foreign protein was?

18 A. EcoRI endonuclease. That's capital E, little "c,"  
19 little "o," capital R, capital I as a Roman numeral.

20 Q. Okay. What did you do with that EcoRI endonuclease  
21 that --

22 A. Endonuclease.

23 Q. -- endonuclease that was available to you at Dr.  
24 Webster's lab?

25 A. The gene for that protein was cloned, and I took

23

1 Display of Peptides and Proteins"?  
2 A. I wrote a preface or introduction. I forgot what  
3 it was called.  
4 Q. Can you confirm that the -- I think it's called a  
5 foreword.  
6 A. Foreword.  
7 Q. Can you confirm that attached to McCafferty  
8 Deposition Exhibit 13 is the foreword that you wrote?  
9 A. Yes.  
10 Q. I'm going to ask you some questions about that  
11 foreword and about the events that you talk about in that  
12 foreword.  
13 On the very first page, in the second paragraph,  
14 you talk about phage display having "its genesis in May  
15 1984." Do you see that?  
16 A. Yes.  
17 Q. I wonder if you could describe for us, in your own  
18 words, what happened in May of 1984 that you consider to be  
19 the genesis of phage display?  
20 A. Well, I had been working on sabbatical in Bob  
21 Webster's lab at the department of biochemistry in -- at  
22 Duke University. And I had been doing a number of  
23 experiments with filamentous phage, which was his specialty  
24 and which I had come to work on as well.  
25 And the -- among the things that I was doing was

22

1 pieces of the gene that specified pieces of the endonuclease  
2 and inserted them into the coat protein gene, the so-called  
3 gene III of filamentous phage.

4 And then demonstrated in a somewhat indirect  
5 method that those pieces of the foreign protein, that EcoRI  
6 endonuclease, were indeed displayed on the phage.

7 Q. Did you publish a paper on that work?

8 A. Yes. In 1985, a paper in "Science" magazine.

9 MR. HARTH: Would you mark this as Exhibit 2,  
10 please.

11 (SMITH DEPOSITION EXHIBIT NO. 2 WAS MARKED  
12 FOR IDENTIFICATION BY THE REPORTER.)

13  
14 BY MR. HARTH:

15 Q. I'm handing you what we have marked as Smith  
16 Deposition Exhibit 2. Is that the article that you  
17 published in "Science"?

18 A. Yes.

19 Q. And this article describes your insertion of the  
20 foreign -- the gene for the foreign protein into the gene  
21 for gene III and the display of that protein on --

22 A. Yes.

23 Q. -- the phage?

24 A. Yes.

25 Q. Now, in your foreword, you say that by 1988 Steve

24

1 Parmley, a graduate student in your lab, had developed a  
2 practical display vector and a very effective affinity  
3 selection method.

4 What was that practical display vector that you're  
5 referring to in the foreword?

6 A. Well, there were a series of vectors. They were  
7 called fUSE vectors.

8 So that's spelled lower case "f" and then upper  
9 case U-S-E.

10 And there were a series of them that he  
11 constructed. But basically they were the same type of  
12 vector.

13 And they put -- they put a cloning site, which is  
14 a site for a restriction endonuclease, that was unique in  
15 the whole virus chromosome, in a suitable place in the  
16 filamentous phage gene III. This is the gene for the coat  
17 protein into which we were displaying foreign domains.

18 So it would have been similar to the original  
19 experiments that I did in Webster's lab. But, here, that  
20 cloning site made the display easier to do and also put the  
21 foreign domain in a different location in the coat protein.

22 Q. What was that location?

23 A. The original work in Webster's lab put the foreign  
24 domain roughly in the middle of the protein. Steve  
25 Parmley's work tried a number of locations, but the one that

25

1 seemed to work the best by his criteria was putting the  
2 foreign domain at the N. terminus, the beginning of the  
3 protein.

4 Q. Did Dr. Parmley's work involve what is known as a  
5 phagemid?

6 A. Parmley tried a number of types of vectors, one of  
7 which was a series of phagemid vectors called pIG3 vectors.

8 So that's lower case "p," capital I, capital G,  
9 and then the numeral 3.

10 These were standard phagemids, which was a well-  
11 developed technology at the time. But they had, in addition  
12 to the standard features of a phagemid, they had a copy of  
13 the -- a modified version of the gene III protein.

14 Q. How was the gene III protein modified in this  
15 phagemid?

16 A. The phagemid had a modified gene III protein that  
17 had a suitable, a convenient cloning site, as we call it, a  
18 restriction site that was unique in the whole construct and  
19 it allowed foreign domains to be easily -- the coding  
20 sequence for foreign domains to be easily inserted into the  
21 vector at that point.

22 Q. All right. And was Dr. Parmley able to  
23 successfully display proteins or peptides on -- using these  
24 phagemids?

25 A. Yes.

26

1 MR. VEZEAU: Objection, lack of foundation  
2 and alternative.

3 BY MR. HARTH:

4 Q. Let me ask it this way. Was Dr. Parmley able to  
5 display anything using a phagemid system?

6 A. Yes.

7 Q. What was it that he was able to display?

8 A. Can I give an answer that I'm not a hundred  
9 percent sure of?

10 Q. Go ahead.

11 A. I believe it was pieces of the E. coli lacZ gene  
12 that encodes a protein called Beta-galactosidase. I do have  
13 the books, but -- so I'd have to look at them to be sure of  
14 that.

15 Q. Okay. What books do you mean?

16 A. Well, maybe his lab books. But his thesis is  
17 here, and it may be in that thesis.

18 Q. All right.

19 A. I actually can't remember whether that work on  
20 phagemid is in his thesis.

21 Q. Can you also describe, at least in general terms,  
22 the very effective affinity selection method that you refer  
23 to in the foreword?

24 A. The general idea is to start with some binding  
25 protein or binding entity, such as an antibody -- in his

27

1 case it was an antibody -- and immobilize it onto a surface.

2 In his case it was just the surface of a plastic petri dish.

3 And then expose that surface to a mixture of bacteria phage,  
4 filamentous bacteria phage.

5 A tiny number of the phage would be phage  
6 displaying a foreign domain that the antibody recognizes.  
7 And the vast bulk of the phage would be phage that don't  
8 display that domain, empty phage.

9 And after exposing that surface, then the surface  
10 is washed so anything that is not bound to the surface is  
11 removed. And the phage that were bound by the antibody  
12 would be retained.

13 Then what he showed was that the phage that bound  
14 were overwhelmingly the phage that displayed the foreign  
15 domain recognized by the antibody.

16 Whereas, the background phage, which were  
17 overwhelmingly numerous in the initial mixture of phage,  
18 were mostly gone. That was the -- what ultimate -- he  
19 called it biopanning, but ultimately this came to be called  
20 affinity selection.

21 Q. Now, you describe lunch on January 19, 1988, as an  
22 epiphany. Why was that?

23 A. I was visiting the malaria group at the National  
24 Institutes of Health and two of the young workers there.

25 Vidal de la Cruz and Tom McCutchan, who was his supervisor

28



1 who had invited me there, were telling me about some work of  
2 Mario Geysen.

3 THE WITNESS: Do you want the spelling?

4 THE REPORTER: Uh-huh.

5 THE WITNESS: Mario is M-a-r-i-o. And Geysen  
6 is G-e-y-s-e-n.

7 A. Mario Geysen had made libraries, random libraries,  
8 of peptides by chemical means.

9 And the gist of the conversation between Vidal,  
10 Tom, and me was essentially the same experiments of making  
11 libraries could be done with filamentous phage.

12 And although Mario Geysen developed clever  
13 techniques for surveying/screening his chemical libraries of  
14 peptides for peptides that would bind to some target protein  
15 such as an antibody, phage display would make that much  
16 easier and make it possible to survey libraries many orders  
17 of magnitude larger.

18 That was the general gist of that conversation.

19 Q. And did you come up with a term for that idea?

20 A. Ultimately, we called it an epitope library. I'm  
21 actually not sure of what -- I don't know if I had a term at  
22 the time.

23 Q. But in your later work when you're talking about  
24 epitope libraries, that refers back to that lunch in January  
25 of --

29

1 A. Yes.

2 Q. -- nineteen --

3 A. '88.

4 Q. -- eighty-eight?

5 And did you, in fact, publish later in 1988 on  
6 this idea of an epitope library?

7 A. Steve Parmley and I published a paper in "Gene"  
8 around the summer of 1988. And that paper detailed Steve's  
9 work on developing display vectors, especially the fUSE  
10 vectors.

11 But it contained in it, I think in the discussion  
12 section -- I haven't read the paper in awhile, but it's  
13 probably in the discussion section -- a short, speculative  
14 sentence to the effect that this could be used to display  
15 random peptides that we would call -- what we would call an  
16 epitope library.

17 Q. At that point you had not actually created an  
18 epitope library?

19 A. No. We were trying to, but as of that point --  
20 well, I don't -- I'm not sure, actually. I'm not sure  
21 exactly about the timing here.

22 (SMITH DEPOSITION EXHIBIT NO. 3 WAS MARKED  
23 FOR IDENTIFICATION BY THE REPORTER.)

24 \_\_\_\_\_  
25 BY MR. HARTH:

30

1 Q. Let me show you what we've marked as Smith  
2 Deposition Exhibit No. 3. Is this a copy of the article in  
3 "Gene" by Dr. Parmley and yourself that you were just  
4 referring to?

5 A. Yes. I see that I got the date slightly wrong, so  
6 it's late in nineteen -- published late in 1988.

7 Q. All right.

8 A. This is the right paper.

9 Q. Did you submit a grant application to the National  
10 Institute of Health in 1988 with respect to seeking funding  
11 for work on this epitope library idea?

12 A. Yes.

13 Q. I'm going to show you what was previously marked  
14 as Pope Deposition Exhibit 2, which is in fact two  
15 documents. And if you would look, you'll see the very first  
16 page of this document is marked CM 009441, and if we go  
17 through until you get to CM 009480. I want to ask you about  
18 that section of this exhibit.

19 A. Okay.

20 Q. Do these pages from Pope Deposition Exhibit 2,  
21 that is CM 009441 through CM 009480 -- what are those pages?  
22 What is that section?

23 A. That is a grant proposal -- actually could I --

24 Q. Yeah, take your time and make sure you're sure.

25 A. This is a grant proposal that was submitted in

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1 1987.

2 Q. 1987?

3 A. Yes. The beginning funding date is 4/1/88, but  
4 the submission -- I'm afraid I didn't bring my folder on  
5 this grant proposal. But the submission would have been  
6 July or June of '87 probably. I believe that's when you  
7 would have to submit for a 4/1/88 --

8 Q. All right.

9 A. -- starting date. And this covers the idea of  
10 what we were calling fusion phage at the time. I presented  
11 it as a continuation of our work on filamentous phage  
12 physiology, but it does not, I believe -- I can't imagine it  
13 would cover the epitope library concept because it was  
14 submitted before January of 1988.

15 Q. All right.

16 A. And I don't see any reference to the epitope  
17 library.

18 Q. All right. If you'll then continue with this  
19 document, starting on CM 009481 and continuing to the end of  
20 the document, what is that?

21 A. This is a submission -- it's a resubmission of a  
22 proposal for a grant to support research on what I'm now  
23 calling filamentous fusion phage.

24 So in contrast to the previous proposal that was  
25 part of this exhibit, the focus of this is entirely on

32

1 filamentous fusion phage rather than on phage physiology in  
2 general.

3 And this covers the -- this proposal covers the  
4 concept of the epitope library, as did its predecessor.  
5 This is a resubmission of a proposal that was not funded.  
6 And the -- it also covers the concept of infectious  
7 libraries -- of infectious antibodies, which would now be  
8 called phage antibodies.

9 Q. What was the date this grant application starting  
10 on 9/4/81 was submitted?

11 A. The deadline for this submission was 11/1/1988. I  
12 have looked for documentation of this, but I know that I --  
13 I don't know, but I'm pretty sure that I submitted a few  
14 modified pages of this documentation. And the modifications  
15 had to do with what we would now call phage antibodies.  
16 That would have been -- those modifications would have been  
17 at 11/1/88 or no more than a day or two after that.

18 Q. And does the copy of the grant application  
19 starting at 9481, does that have the modified pages?

20 A. Yes. It is the modified pages. And I have sought  
21 in vain for the proposal that was originally submitted.

22 Q. All right. So the proposal with the modified  
23 pages was submitted on November 1, 1988?

24 MR. VEZEAU: Objection, leading, lack of  
25 foundation.

33

1 We'll send you and Mr. Hoskins a letter following the  
2 deposition reiterating these requests.

3 Do you recall why it was -- let me step back.

4 Was the application that you've identified as  
5 being submitted around July of 1987 that starts at 9441 at  
6 the beginning of Pope Exhibit 2, was that grant funded?

7 A. No.

8 Q. And was the in-between grant that you think was  
9 filed about March of 1988 funded?

10 A. No.

11 Q. Do you recall the reasons why that March 1988  
12 grant was not funded?

13 A. I have -- the introduction to the grant that was  
14 submitted 11/1/88 is a rebuttal of those -- of the  
15 criticisms of the previous proposal.

16 Q. Could you just identify the Bates number of --

17 A. The --

18 Q. -- where that starts?

19 A. -- CM number?

20 Q. Yes.

21 A. The CM number of the introduction is CM 9491  
22 through 9492. So there were -- the objections had to do  
23 with construction of libraries that I regarded as a  
24 misunderstanding of "construction of libraries."

25 Q. So that March of 1988 grant did include the idea

35

1 BY MR. HARTH:

2 Q. When was the modified proposal submitted?

3 A. I cannot find records of that, but within a day or  
4 two of 11/1/88 is my best of my recollection.

5 Q. Now, you say that the 11/1/88 grant application  
6 was a resubmission of an earlier application. Was that  
7 earlier application the application that constitutes the  
8 first half of Pope Exhibit 2?

9 A. No. There was one in between.

10 Q. There was one in between, all right.

11 A. And it would have had the title Filamentous Fusion  
12 Phage rather than the title Filamentous Phage Physiology.

13 Q. Do you know when that in-between grant was  
14 submitted?

15 A. Let me calculate.

16 I'm not sure, but my guess is March of 1988, early  
17 in 1988. I don't remember the NIH deadlines then.

18 Q. And do you still have a copy of that earlier  
19 in-between grant application?

20 A. Yes. I didn't bring it with me.

21 Q. All right.

22 A. I'm sure I do.

23 Q. All right. I'm going to request that you provide  
24 both sides with a copy of that. This is now the second  
25 request I've made from you. And I'll keep track of it.

34

1 of the epitope libraries?

2 A. Yes, it included the idea of an epitope library.

3 Q. Did it include the idea of phage antibodies?

4 A. No.

5 Q. And that was added to the proposal --

6 A. The resubmission --

7 Q. -- the resubmission?

8 A. -- contained a proposal of phage -- what now would  
9 be called phage antibodies.

10 Q. All right.

11 A. So the objections had to do with the library  
12 construction, that affinity purification didn't represent a  
13 technological advance, about whether peptides would be  
14 efficiently displayed, about folding of peptides displayed  
15 on phage, and then about the quality of the peptide ligands  
16 that would emerge from the proposed affinity selection  
17 procedures.

18 And that's -- at least those are the criticisms  
19 that I responded to.

20 Q. All right. In the foreword to "Phage Display of  
21 Peptides and Proteins," you talk about how, "In October of  
22 1988, while preparing to resubmit my NIH proposal...I  
23 happened to read the 'Science' article by Bird, et al., on  
24 single-chain antibodies, I was inspired by a new vision."

25 I'm going to ask you to first look at what was

36

1 marked at a previous deposition as CAT 30(b)(6) Exhibit 26  
2 and ask you whether this is a copy of the article by Dr.  
3 Bird that you were referring to in your foreword?

4 A. Yes, this was the article.

5 Q. And describe for us in your own words the new  
6 vision that came to you upon reading that, the Bird article.

7 A. This article by Bird, et al., describes making an  
8 engineered version of an antibody which pares the antibody  
9 molecule down to kind of the minimal structure that could be  
10 expected to have the specific binding properties of a whole  
11 antibody.

12 So the pared-down protein is called a single-chain  
13 antibody. It has several other names as well. And it is  
14 about 200 -- a little bit more than 200 amino acids long,  
15 roughly 110 amino acids of heavy chain, 110 amino acids of  
16 light chain: the two chains that make up natural  
17 antibodies. But just the 110 amino acids of the two chains  
18 that actually have the binding structures that bind  
19 specifically to antigen, and then they're connected by a  
20 linker.

21 And the vision was that this would be potentially  
22 a molecule that was simple enough to display on filamentous  
23 phage. And that if that could be accomplished and the  
24 protein retained its ability to bind specifically to  
25 antigen, then ultimately it might be possible to construct

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1 what I -- in my own terminology at the time, I called it a  
2 paratope library that was analogous to the epitope library.

3 So an epitope library was a huge array of peptides  
4 displayed on filamentous phage. And some of those peptides  
5 might be expected to bind to any particular target antibody.

6 The paratope library concept would reverse the  
7 roles of epitope and paratope. Paratope was the name for  
8 the pared-down antibody. You'd have a very large library of  
9 pared-down antibodies or paratopes displayed on filamentous  
10 phage.

11 And the user could put -- use any antigen of  
12 interest and use that antigen to select out of that huge  
13 library of displayed-on-phage those few pared-down  
14 antibodies, those few single-chain antibodies or paratopes,  
15 as I called them, that would bind to their particular  
16 antigen.

17 So this would be a way of obtaining monoclonal  
18 antibodies that didn't involve animals or culturing animal  
19 cells in vitro. That would be a micro -- a simple  
20 microbiological procedure for making antibodies.

21 Q. Did you envision using the biopanning method that  
22 we've talked about in connection with this?

23 MR. VEZEAU: Objection, leading.

24 BY MR. HARTH:

25 Q. How did you envision being able to select the

38

1 paratopes or single-chain fragments of interest?

2 MR. VEZEAU: Objection, lack of foundation.

3 BY MR. HARTH:

4 Q. You can answer.

5 A. I envisioned using affinity selection or, quotes,  
6 biopanning. The idea would be the same as we envisioned in  
7 the case of -- the same as Steve Parmley had demonstrated.

8 The target antigen would be immobilized on a  
9 plastic surface. And the library of phage displaying pared-  
10 down antibodies would be exposed -- the surface would be  
11 exposed to that library, and those phage that display a  
12 single-chain antibody or paratope or pared-down antibody  
13 that would bind to the antigen would be retained on the  
14 surface. And other phage-displaying antibodies that don't  
15 bind to the antigen would be washed away. And then what  
16 remained on the plate would be eluted and would represent  
17 the antibodies of interest.

18 MR. HARTH: All right. Why don't we take a  
19 short break. I want to get some of the copies that have  
20 been made. I see that they're back in the room. And we  
21 usually take a break every 80 or 90 minutes or so. Let's do  
22 that now and in ten minutes we'll pick it up again.

23 (Recess.)

24 (SMITH DEPOSITION EXHIBIT NO. 4 WAS MARKED  
25 FOR IDENTIFICATION BY THE REPORTER.)

39

1  
2 MR. HARMON: Back on record.

3 BY MR. HARTH:

4 Q. Dr. Smith, you previously testified that you have  
5 incorporated this new vision concerning phage antibodies  
6 into your November 1, 1988, grant proposal. And I'd simply  
7 like you to confirm that Smith Deposition Exhibit 4, which  
8 is a copy taken from your files, is indeed that grant  
9 application.

10 MR. VEZEAU: Can you give us a second so we  
11 can see if we can find the same document?

12 MR. HARTH: It's right at the end.

13 MR. VEZEAU: Okay. Thank you.

14 THE WITNESS: What was the question?

15 BY MR. HARTH:

16 Q. The question is, is Smith Deposition Exhibit 4 a  
17 copy of your November 1, 1988, NIH grant application taken  
18 from your file?

19 A. Yes.

20 (SMITH DEPOSITION EXHIBIT NO. 5 WAS MARKED  
21 FOR IDENTIFICATION BY THE REPORTER.)

22 BY MR. HARTH:

24 Q. I'd now like to hand you what we've marked as  
25 Smith Deposition Exhibit 5, which is a copy of another

40

1 document taken from your files.  
 2 MR. VEZEAU: May we see that, please?  
 3 MR. HARTH: Toward the front.  
 4 MR. VEZEAU: Thank you.  
 5 BY MR. HARTH:  
 6 Q. Can you identify this document?  
 7 A. This is an application for a National Research  
 8 Service Award, would be a senior -- well, you might call it  
 9 a fellowship, to spend a year working with Genex on -- just  
 10 make sure that this is the one that I think it is -- with  
 11 Genex Corporation on developing the concept of an epitope  
 12 library -- I'm sorry, of a phage antibody library, what we  
 13 called a paratope library.  
 14 Q. What was the date of this application?  
 15 MR. VEZEAU: Objection, lack of foundation.  
 16 BY MR. HARTH:  
 17 A. Am I supposed --  
 18 Q. You can answer, yes.  
 19 A. I believe the deadline was January of '89. I have  
 20 down the -- in the signature space, the date is -- I haven't  
 21 got my signature there, but the date I've written in as  
 22 January 2, 1989. And I believe that I typed this front page  
 23 personally.  
 24 Q. Did you actually submit this application?  
 25 A. Yes. It was not -- it was not accepted.

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1 Q. All right. It was not accepted in what sense?  
 2 A. Not in the sense that they did not, did not accept  
 3 this proposal and review it.  
 4 Q. Because it was late?  
 5 MR. VEZEAU: Objection, leading.  
 6 BY MR. HARTH:  
 7 Q. Why was that?  
 8 A. The reason was that the letters of recommendation,  
 9 according to new rules that I was not aware of, had to be,  
 10 I believe it was, part of the application. It was something  
 11 to do with the letters of recommendation that had to support  
 12 this proposal. So it was not accepted for review by NIH.  
 13 Q. Was the NIH application, Smith Deposition Exhibit  
 14 4, granted?  
 15 A. Yes, that was funded.  
 16 (SMITH DEPOSITION EXHIBIT NO. 6 WAS MARKED  
 17 FOR IDENTIFICATION BY THE REPORTER.)  
 18  
 19 BY MR. HARTH:  
 20 Q. I'm handing you what we've marked as Smith  
 21 Deposition Exhibit 6. What is that document?  
 22 A. This is called the summary statement or in sort of  
 23 a jargon, the pink sheet. It is a critique summarizing -- a  
 24 critique of the proposal, summarizing the comments of the  
 25 study section. And then that's followed by just a list of

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1 the members of the study section and the officers from NIH  
 2 that ran the study section.  
 3 Q. When were you informed that the grant had been  
 4 accepted?  
 5 A. I can just give you a rough time. My guess would  
 6 be the middle of April of '89. I know that the study  
 7 section met -- it's the February/March study section, series  
 8 of study sections. I don't know exactly when they met.  
 9 I see a note up here on the top that says M.Z.  
 10 4/14/89. My guess is that was Marian Zatzman, who was the  
 11 program officer for the agency that would be administering  
 12 this proposal.  
 13 So my guess is that it went through her office  
 14 then, so I would probably have gotten it soon after that.  
 15 She was very expeditious about sending out her resumes,  
 16 her summary statements.  
 17 Q. Were you required to respond to the pink sheet,  
 18 Exhibit 6?  
 19 A. Apart from saying "hooray"? No.  
 20 Q. Did you learn from this pink sheet that the grant  
 21 had been accepted or --  
 22 A. I learned that the grant was -- well, if you'll  
 23 look on the first page, it received a priority score of  
 24 130 and a percentile rating of 6.3. And that was clearly  
 25 going to be in the funding zone for this round of NIH

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1 funding.  
 2 So that meant -- this is not a formal notification  
 3 of funding; but to all intents and purposes, it meant I was  
 4 going to be funded.  
 5 Q. Were you in fact funded?  
 6 A. Yes.  
 7 Q. What was the effective date of the grant?  
 8 A. Of the starting of the grant?  
 9 Q. (Nodding head.)  
 10 A. I believe as the requested date, which would have  
 11 been 7/1/89 -- that is July 1, 1989. I think that's when  
 12 it started.  
 13 Q. You stated that the single-chain antibody  
 14 fragments discussed in the Bird article typically are in the  
 15 realm of 200 amino acids long?  
 16 A. Well, it's --  
 17 MR. VEZEAU: Objection, lack of foundation.  
 18 For your information, I will state objections  
 19 on the record. I don't know if you've been in a deposition  
 20 before.  
 21 THE WITNESS: (Shaking head.)  
 22 MR. VEZEAU: But those are for the judge to  
 23 rule on. If I think a question -- and David will do it when  
 24 I question you -- is improper, I'll state my objection. And  
 25 that's for the court to rule on.

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1 Certainly, if you can answer the question and  
2 you know the answer, you should. So I hope my objections  
3 don't upset you. It's not intended really for you as an  
4 audience.

5 THE WITNESS: I understand.

6 MR. VEZEAU: Okay.

7 BY MR. HARTH:

8 A. About 230, 250 amino acids.

9 Q. All right. How many base pairs would that be?

10 A. The number of base pairs in the coding sequence is  
11 three times of the number of amino acids, so that would be  
12 about 750 amino acids -- 700 to 750, in that region.

13 MR. VEZEAU: You said amino acids. Did you  
14 mean base pairs?

15 THE WITNESS: Sorry.

16 BY MR. HARTH:

17 A. The number of base pairs is three times the number  
18 of amino acids. So the number of base pairs would have been  
19 700 to 750 or so.

20 Q. I'm going to ask you to take another look at Smith  
21 Deposition Exhibit 3, which is the Parmley and Smith article  
22 in "Gene."

23 A. Yes.

24 Q. Would you look at page 315 of that article, which  
25 also has a Bates stamp number in the lower right-hand corner

45

1 of M O11627? Do you have that?

2 A. Yes.

3 Q. And if you'll look in the upper left-hand corner  
4 of that page, starting five lines down, the following  
5 statement is made: "These results demonstrate the ability  
6 of fUSE vectors to accept inserts up to 335 bp" --

7 What does "bp" stand for?

8 A. Base pairs.

9 Q. -- parentheses perhaps more parentheses and  
10 express the foreign aa" --

11 Which means...?

12 A. Amino acid. Amino acids.

13 Q. -- "encoded in the inserts on the surface of the  
14 virion"?

15 A. VEER-e-on.

16 Q. VEER-e-on. "Some inserts by their very nature  
17 will affect pIII function. Inserts that contain anchor  
18 domains or other hydrophobic segments may stop transfer of  
19 pIII into the host membrane" -- citing Davis and Model, 1985  
20 -- "and presumably would not be tolerated. Inserts that  
21 exceed 335 base pairs may lead to excessive breakdown of the  
22 fusion protein or otherwise impair pIII function, so for the  
23 time being we recommend using fragments of 100 to 300 base  
24 pairs."

25 Did I read that correctly?

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1 A. Yes.

2 Q. How did you think you could achieve the display of  
3 phage antibodies as described in your November 1, 1988,  
4 grant application when those fragments would be somewhere in  
5 the neighborhood of 675 base pairs, when in an article that  
6 you had published earlier in the year, you had stated that  
7 inserts that exceed 335 base pairs may lead to excessive  
8 breakdown and recommended using fragments of 100 to 300 base  
9 pair?

10 MR. VEZEAU: Objection, lack of foundation  
11 and misstates the witness's testimony as to the number of  
12 base pairs. You said 650.

13 BY MR. HARTH:

14 Q. And you said...?

15 A. I think I said around 700 to 750.

16 Q. All right. But the point is that the antibody  
17 fragments that Bird was talking about were significantly  
18 more than 335 base pairs, correct?

19 A. Yes.

20 Q. And so how was it that you thought you could  
21 display single chain fragments of 700 or 750 base pairs in  
22 light of the statement that I just read you from the "Gene"  
23 article?

24 A. The reservations that Steve Parmley and I  
25 expressed in that "Gene" paper that you just quoted from

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1 weren't meant to be formal or strict guidelines. They were  
2 very informal recommendations.

3 And at the time we did not -- we did not realize  
4 that there would be a strong motivation for considering much  
5 larger inserts. When the Bird, et al., paper became -- when  
6 I became aware of the Bird, et al., paper that you've  
7 already mentioned, that provided a strong motivation for  
8 considering much larger inserts. And certainly at the time  
9 I did not consider that, our recommendation against longer  
10 inserts, to be deterrent to considering the much larger  
11 inserts that would be required for a phage antibody library  
12 as we would now call it --

13 MR. VEZEAU: Would you --

14 A. -- display of phage on -- display of antibodies on  
15 phage.

16 MR. VEZEAU: Would you mark that portion of  
17 the transcript so I can come back to that? Will you be able  
18 to do that?

19 THE REPORTER: (Nodding head.)

20 MR. VEZEAU: Thank you.

21 MR. HARTH: Would you mark this, please.

22 BY MR. HARTH:

23 A. Shall I continue this answer?

24 Q. Yes, please.

25 A. There were also, as I tried to spell out in the

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1 grant proposal submitted November 1, '88, there were some  
2 considerations about single-chain domains, single-chain  
3 antibodies, that might make it a little easier because --  
4 than a -- rant (phonetic) of most inserts of that size  
5 because it was reasonable to expect it would be a folded  
6 domain.

7 And a folded domain would be more likely, we  
8 thought, to survive degradation in the relevant compartment  
9 of the cell, which is the periplasm. So that they might be  
10 a particularly favorable case for displaying large domains  
11 than an average, randomly chosen segment of the amino acids  
12 of the same length.

13 MR. HARTH: Would you mark this, please?

14 (SMITH DEPOSITION EXHIBIT NO. 7 WAS MARKED FOR  
15 IDENTIFICATION BY THE REPORTER.)

16 BY MR. HARTH:

17 Q. Let me hand you what we've marked as Smith  
18 Deposition Exhibit No. 7, which is a copy of a paper by  
19 Skerra, S-k-e-r-r-a, and Pluckthun, P-l-u-c-k-t-h-u-n,  
20 entitled "Assembly of a Functional Immunoglobulin Fe  
21 Fragment in E. coli," which was published in "Science." Are  
22 you familiar with this paper?

23 A. Yes, I -- yes, I know about this paper. You asked  
24 "familiar." This is not a paper that I read every comma of

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1 deeply. But I -- in a general way, I was acquainted with  
2 this paper.

3 Q. And did you become acquainted with this paper when  
4 it came out or thereabouts?

5 A. I can't answer that question. I would -- my guess  
6 is that I was, but I don't know. I can't -- I can't  
7 certify. And I have as far as I know, I have not quoted --  
8 not cited it anywhere.

9 Q. All right. Did this paper have any effect on your  
10 thinking about the ability of antibody fragments to fold  
11 properly in periplasmic space?

12 MR. VEZEAU: Objection, lack of foundation  
13 and leading.

14 BY MR. HARTH:

15 A. I -- at least indirectly it did because it was  
16 part of the growing field of showing successes in in vitro  
17 expression of antibodies.

18 And if I -- if this paper did not directly  
19 influence what I was thinking at the time, indirectly I was  
20 aware of the field. I was aware of the field, the successes  
21 of the field. They were pretty well publicized.

22 So I can say with a fair amount of assurance that  
23 this paper at least indirectly influenced my thinking. And  
24 whether the paper itself did, I can't answer, as I've said.

25 Q. As a recipient of an NIH grant, were you required

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1 to report periodically to the NIH on your progress?

2 MR. VEZEAU: Objection, lack of foundation as  
3 to who the recipient was.

4 BY MR. HARTH:

5 A. Yes. Any recipient of a NIH grant has to apply  
6 for what's called a noncompeting continuation, which would  
7 include a short progress report; and at the end of the  
8 granting period, either submit a competitive renewal  
9 proposal, which would include a summary of what you did in  
10 the previous -- under the previous grant period, or a final  
11 report.

12 Q. At the end of the grant period?

13 A. Right. They have to have a final report either as  
14 a final report itself or as the progress report for a  
15 competitive renewal proposal.

16 Q. All right.

17 MR. HARTH: Would you mark this, please?

18 (SMITH DEPOSITION EXHIBIT NO. 8 WAS MARKED  
19 FOR IDENTIFICATION BY THE REPORTER.)

20 BY MR. HARTH:

21 Q. Would you look at what we have marked as Smith  
22 Deposition Exhibit 8 and tell me whether you can identify  
23 that document?

24 A. This is the noncompeting and continuation

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1 application so, technically, it's termed Application for  
2 Continuation Grant.

3 And it would request period -- funding for the  
4 7/1/91 to 6/30/92 year of the grant, which would be -- so  
5 that would be year 3. Let's see. '89 to '90, '90 to '91.  
6 Yes. So it would be request for the year 3 and would  
7 summarize progress in year 2.

8 Q. All right. And as part of this continuation  
9 application, did you summarize your progress for the  
10 previous year?

11 A. Yes.

12 Q. Where does that appear in this document?

13 A. Which page numbers do you want me to give you, the  
14 MO page numbers?

15 Q. Yes, why don't do you that.

16 A. Okay. The MO page numbers are 80550 to 80552.

17 Q. And that section of the continuation application  
18 reports on progress made during what period?

19 A. That would be from July 1st -- actually -- so that  
20 would be July 1, 1990, to June 30, 1991.

21 Q. All right. I want to call your attention to page  
22 number MO80552. The first full paragraph on that page --  
23 one, two, three -- seven lines down, there is a sentence  
24 that reads: "We ourselves have constructed a phage  
25 displaying a single-chain anti-fluorescein antibody exactly

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1 as planned in the original grant proposal."  
 2 Do you see that?  
 3 A. Yes.  
 4 Q. The original grant proposal was which?  
 5 A. That was the proposal that was submitted 11/1/88.  
 6 Q. And had you in fact, during this time period,  
 7 constructed a phage that displayed an anti-fluorescein  
 8 antibody on its surface?  
 9 A. Yes. A graduate student named Ned Watson, in my  
 10 lab, had constructed -- made this construct with the  
 11 anti-fluorescein single-chain antibody, which was the one  
 12 that was described in the Bird, et al., paper that you have  
 13 already referred to.  
 14 Q. When did Ned Watson accomplish this?  
 15 A. I can't tell you exactly because I no longer have  
 16 the notebooks covering that period, but the -- I'm pretty  
 17 sure he started in the fall, possibly late summer of 1990.  
 18 And I'm pretty sure he was basically finished by Christmas  
 19 of 1990.  
 20 MR. VEZEAU: Objection, pure speculation. By  
 21 the way, your notes are in the pile of documents you gave  
 22 us, your own chronology, so you might want to refer to that.  
 23 THE WITNESS: Thank you. I have a chronology  
 24 in there?  
 25 MR. VEZEAU: Yes. I assume it's your

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1 handwriting, maybe someone else's, but it was in your files.  
 2 MR. HARTH: Let's mark it as an exhibit.  
 3 (SMITH DEPOSITION EXHIBIT NO. 9 WAS MARKED  
 4 FOR IDENTIFICATION BY THE REPORTER.)  
 5 \_\_\_\_\_  
 6 BY MR. HARTH:  
 7 Q. I'm going to hand you what we've marked as Smith  
 8 Exhibit 9. What is that this document?  
 9 A. My -- I'm not sure. But my guess is that this is  
 10 a summary of significant dates that I submitted to the  
 11 lawyers for Enzon in pursuant of the patent on single-chain  
 12 antibodies. And it's a copy of that.  
 13 And it's accompanied -- the original accompanied  
 14 notebooks covering this work that I sent to that -- to those  
 15 lawyers. Those notebooks got lost in the mail. We have  
 16 never seen them since.  
 17 So this would have been sometime in nineteen --  
 18 end of 1991, beginning of 1992 or something like that. I'm  
 19 not sure when I sent those documents, those notebooks.  
 20 But I see that my memory is not correct here  
 21 because if we look at August 25, 1990, that's when Ned  
 22 Watson first started, or close to when he first started,  
 23 working on these -- on this display. So he demonstrated  
 24 inserts August 25, 1990. And I give a reference to page  
 25 number in his notebook I called NED-1.

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1 Q. All right.  
 2 A. And it wasn't until February 1, according to this.  
 3 I did not remember this correctly, but it wasn't until  
 4 February 1 that we did the specific binding assays. And  
 5 that refers to a page number. Again, these -- neither of  
 6 these two lab books is available anymore.  
 7 Q. When did Ned Watson work in your lab?  
 8 A. Well, obviously it was before August 25, 1990,  
 9 because he'd done a few experiments beforehand. So I guess  
 10 it must have been in the -- earlier in the summer of that  
 11 year. He was doing a rotation, which meant a few months of  
 12 work in the laboratory just seeing how the laboratory is.  
 13 And I don't know when he stopped. My recollection  
 14 was the end of December, but I think that may well be wrong  
 15 now because it's not likely he would have started, say,  
 16 beginning of August and worked all the way through the end  
 17 of December on a rotation. So I'm not sure actually when he  
 18 worked in the laboratory.  
 19 And that would mean that the -- if I'm correct  
 20 about that, the experiments demonstrating binding on  
 21 February 1, 1991, would have had to be -- would have had to  
 22 be done by me using his constructs.  
 23 Q. Do you know what the reference "RDE" refers to?  
 24 A. RDE is a name of a lab book. And so RD refers to  
 25 Robert Davis. He's my chief technician. And E would be

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1 book E of his books. And 65 would refer to the page number  
 2 in that book.  
 3 So my guess is that he did at least some of the  
 4 manipulations for this experiment; otherwise, it wouldn't be  
 5 in his book. If I did everything, it would be in another  
 6 book like SE or SF; S for Smith and then a letter  
 7 designation.  
 8 Q. All right. Is Exhibit 9 in your handwriting?  
 9 A. Yes, that's my handwriting.  
 10 Q. And did you prepare Exhibit 9 with reference to  
 11 the laboratory notebooks that are referenced? Did you have  
 12 those in front of you --  
 13 A. Yes.  
 14 Q. -- when you did this?  
 15 A. Yes. It was a guide to significant dates.  
 16 Q. The second entry, is that May 2 or May 21?  
 17 A. May 21, 1990. Again, I'm really not remembering  
 18 correctly here.  
 19 Q. Do you know where Ned Watson is today?  
 20 A. No, but I could find out. He elected to go with  
 21 another professor for his Ph.D. and that professor is here,  
 22 so I can find out where Ned is.  
 23 Q. All right. We'd appreciate that, and we'll put  
 24 that in your letter.  
 25 A. Okay.

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1 Q. Is Robert Davis still with you?  
 2 A. Yes.  
 3 Q. At the time that Ned Watson was doing this work,  
 4 where was he in his schooling?  
 5 A. A beginning graduate student, within the first  
 6 year or year and a half, sometimes will take courses of  
 7 course, but also do what are called -- what we call  
 8 rotations and what are called rotations in most graduate  
 9 programs, I believe.  
 10 So these are periods of, typically, two, three,  
 11 sometimes four months where the student will do a small  
 12 project in a professor's laboratory, get to know the  
 13 laboratory. And this is designed to help a student make up  
 14 his or her mind about which laboratory he is going to choose  
 15 do the Ph.D. project in.  
 16 Q. All right. Did Mr. Watson do this work on his  
 17 own?  
 18 A. No. No. This -- he did the physical work all on  
 19 his own. But certainly in any rotation, the student is new  
 20 to the system, so he would have daily, daily consultation.  
 21 Q. Do you know how the single-chain inserts were  
 22 identified on August 25, 1990, by what technique?  
 23 A. No, I can't tell you. It would be speculative.  
 24 MR. HARTH: Would you mark this, please.  
 25 (SMITH DEPOSITION EXHIBIT NO. 10 WAS MARKED

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1 of entity that's bound to a surface-immobilized ligand.  
 2 So if the format is a 96-well so-called ELISA dish  
 3 made out of polystyrene plastic, in each well you immobilize  
 4 some target. And then each well is filled with something  
 5 that might potentially bind to that target.  
 6 The wells are washed, and then in some way you  
 7 detect the binding by some suitable technique that generates  
 8 color. And the plate reader is basically a color reader.  
 9 It reads the amount of color.  
 10 So if you look up in the -- the upper leftmost  
 11 number is .6. That's an optical density of .609. That's an  
 12 optical density of .609, which would represent sort of a  
 13 relatively strong color. This was probably yellow or green.  
 14 I think probably green. It ought to be a fairly intense  
 15 green color.  
 16 Those .033 at the lower, at the bottom of the left  
 17 column would be something that your eye wouldn't detect as  
 18 color probably. But I would have to look at this more  
 19 carefully to tell you exactly what all these entries are.  
 20 Q. All right. Does -- do these ELISA results have  
 21 any connection to the first experiment demonstrating  
 22 specific binding, which is referenced on Smith Exhibit 9?  
 23 A. Yes. It's -- let's see if there is a date on  
 24 this, on these results. Obviously, the results were  
 25 obtained before 1/22/91. This would be one of the results

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1 FOR IDENTIFICATION BY THE REPORTER.)  
 2 \_\_\_\_\_  
 3 BY MR. HARTH:  
 4 Q. Let me hand you what we've marked as Smith  
 5 Deposition Exhibit 10 --  
 6 MR. VEZEAU: Thank you.  
 7 Q. -- and I'm going to ask whether you can identify  
 8 this document?  
 9 A. Yes. This was -- I was communicating with Carlos  
 10 Barbas at Scripps, who was also interested in display of  
 11 antibodies. And this was probably -- this is a fax to  
 12 Carlos dated 1/22/91.  
 13 And I believe this would be just a few days after  
 14 I returned from a visit to that laboratory. Carlos Barbas  
 15 is in the laboratory of Richard Lerner. So to Richard  
 16 Lerner and Carlos Barbas. And I believe Dennis Burton was  
 17 there, and Angray Kang. At least Andre Kahn and Carlos  
 18 Barbas. And we had sort of talked about problems of phage  
 19 antibodies.  
 20 Q. What is it on the second page that you faxed to  
 21 Dr. Barbas?  
 22 A. Well, this is a -- I would have to sit down to  
 23 tell you exactly. But what -- the printout here is a  
 24 printout of a so-called ELISA plate reader which reads the  
 25 amount of signal of some kind of -- generated from some kind

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1 that were leading to what I regarded on February 1, '91, as  
 2 actually, as an experiment demonstrating specific binding.  
 3 I don't think this itself was the, what I regard  
 4 as the definitive experiment. Partly I've got all these  
 5 other controls.  
 6 I'd have to look at the structure of this to  
 7 deconstruct this. It would take me awhile. I'd probably  
 8 need a hour at least to tell you exactly what's going on in  
 9 this experiment.  
 10 All I can say is I don't think that this was the  
 11 first experiment demonstrating specific binding that I  
 12 referred to, though possibly I have the dates wrong. That  
 13 February 1, 1991, might be wrong. This could be the  
 14 experiment that I was referring to there, but I don't think  
 15 so.  
 16 Q. Was the experiment that you were referring to in  
 17 Exhibit 9 an ELISA experiment?  
 18 A. I'm not sure. It probably was, but I'm not sure  
 19 without seeing -- without being able to see the notebook, I  
 20 won't be able to tell you that.  
 21 Q. Do you know who did the ELISA testing that is --  
 22 the results of which are shown on Exhibit 10?  
 23 A. I don't know for sure. I would imagine that I at  
 24 least did some of the actual manipulations. But Robert  
 25 Davis, my technician, might have done some of the sort of

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1 preliminary work with them and might have washed the plate  
2 or something like that, washed the ELISA dish.  
3 Q. On your chronology you indicate that plasmid  
4 pGX5420 was received from Genex on May 21, 1990. Do you see  
5 that?  
6 A. Yes.  
7 Q. What was the significance of receiving that  
8 plasmid from Genex with respect to your work?  
9 A. GX5420, I'm almost certain, is the plasmid that  
10 encodes the fluorescein single-chain antibody -- the  
11 anti-fluorescein single-chain antibody that Bird, et al.,  
12 described.  
13 Q. And that was the antibody that was inserted into  
14 the phage?  
15 A. Yes.  
16 Q. Was it a whole phage that was utilized here or was  
17 it a phagemid?  
18 A. This is a phage. It was -- the vector was fUSE 5,  
19 which is a phage vector.  
20 Q. When did you first start talking to Genex about  
21 obtaining the anti-fluorescein antibody fragment from Dr.  
22 Bird?  
23 A. I can't give you an exact date, but I'm pretty  
24 sure it was the very end of October of 1988.  
25 Let me see if there is a -- may I refer to Exhibit

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1 4, the grant proposal? Page 31 of that proposal is a Note  
2 on Collaboration with Robert Bird. "Robert Bird of Genex  
3 Corporation intends to collaborate with me on the cloning of  
4 single-chain antibodies into fusion phage --  
5 THE REPORTER: Please slow down.  
6 THE WITNESS: Oh, I'm sorry.  
7 THE REPORTER: "Intends to collaborate with  
8 me..."  
9 A. "...on the cloning of single-chain antibodies  
10 into fusion phage; he will supply the gene and help me  
11 characterize the binding properties of the phage."  
12 Q. Okay.  
13 A. So it would have had -- I would have had to talk  
14 to him, and this is also my memory, right away after reading  
15 his paper. The paper is in an issue of "Science" dated 21  
16 October 1988. And we would have gotten it October 26 or  
17 seventh or something like that; you know, five, six days  
18 later than the publication date.  
19 Q. What accounts for the time that elapsed between  
20 your first talking to Dr. Bird about obtaining a clone of  
21 his single chain in late October of 1988 and your actual  
22 receipt of plasmid pGX5420 on May 21, 1990, some 18 months  
23 later?  
24 A. The negotiations between the University of  
25 Missouri and Genex were very problematical.

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1 Q. How so?  
2 A. There were many details that Genex required,  
3 several aspects of it -- I'm not going to be a hundred  
4 percent sure of my memory here, but this is my recollection  
5 as best I can remember.  
6 There were several details and provisions that  
7 they required that were hard to meet. We had many letters  
8 going back and forth. I met with them there, including  
9 their chief counsel.  
10 And it just turned out to be very difficult to get  
11 them to agree to this collaboration. And I guess maybe from  
12 their point of view, it was difficult for them to get the  
13 university to agree to what they wanted.  
14 Q. Did the university and Genex and yourself  
15 eventually agree on the terms of the collaboration?  
16 A. Can I consult with --  
17 Phil, do you know?  
18 MR. HOSKINS: No, I don't.  
19 A. I believe we did, yes. I believe we came to an  
20 agreement.  
21 Q. Would that have been sometime before May 21, 1990?  
22 MR. VEZEAU: Objection, lack of foundation  
23 BY MR. HARTH:  
24 A. I'm actually not sure.  
25 Q. How was it that you physically obtained the

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1 plasmid that had the single chain?  
2 A. I don't know. My recollection was that I got it  
3 at a meeting a month earlier than this. And I didn't,  
4 evidently. So it must have come in the mail is my guess.  
5 Q. Now, between the time that you submitted your  
6 grant proposal in early November 1988 and February 1, 1991,  
7 when you performed the first experiment demonstrating  
8 specific binding, did you make any attempt to keep secret  
9 your idea for displaying single chain on phage or the work  
10 that you were doing to accomplish that?  
11 MR. VEZEAU: May I get the question back,  
12 please?  
13 (The reporter read the last question.)  
14 A. Not that I remember. I do know that I talked  
15 about it quite freely in a number of instances. For  
16 example, a departmental seminar, I believe I talked about  
17 it, about this -- that concept of what is now called phage  
18 antibodies, sometime in 1989 probably.  
19 Q. Who attends these departmental seminars?  
20 A. Our department. So this would be post-doc  
21 graduate students and faculty from our department.  
22 Q. All right.  
23 A. The division of biological sciences.  
24 And I talked about it at a -- the only public time  
25 that I talked about it in that time that I can remember

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1 specifically is a Banbury Conference in 1990. That would  
 2 have been in April of 1990.  
 3 Q. Where was that held?  
 4 A. Banbury, Long Island in New York.  
 5 Q. Did you give a formal talk at that conference, the  
 6 Banbury Conference?  
 7 A. No. Banbury conferences don't have formal talks.  
 8 But I did give a talk, yes.  
 9 Q. All right. And what was the substance of that  
 10 talk?  
 11 A. The idea, the -- if I could just refresh my memory  
 12 here. The title of Banbury Conference was Vectors For  
 13 Cloning the Immune Response. And the burden of my talk was  
 14 to describe the concept -- no experiments, obviously, at  
 15 that time, but the concept of what we called the paratope  
 16 library or what we would now call phage antibody libraries.  
 17 Q. Now, you have referred to some documents in a  
 18 folder?  
 19 A. Yes.  
 20 Q. Is this a folder that you have kept involving the  
 21 Banbury Conference?  
 22 A. Yes.  
 23 Q. Do you have any notes of your talk at the  
 24 conference?  
 25 A. I won't be able to answer that question

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1 definitively. But these two pages are, I believe, my talking  
 2 notes.  
 3 Q. All right.  
 4 A. They certainly look -- these are exactly like the  
 5 talking notes that I traditionally made in those days.  
 6 Q. All right. Could I see your folder?  
 7 A. Yes.  
 8 MR. HARTH: Have you seen this, counsel?  
 9 MR. HOSKINS: No.  
 10 MR. HARTH: Why don't you take a look.  
 11 MR. HOSKINS: There's no attorney-client  
 12 communications in there?  
 13 THE WITNESS: No.  
 14 MR. HARMON: Do you want to take a short  
 15 break?  
 16 MR. HARTH: Yeah, why don't we go off the  
 17 record.  
 18 (Recess.)  
 19  
 20 MR. HARMON: This is tape 2. Back on record.  
 21 MR. HOSKINS: Yes. I'd like to state for the  
 22 record, make a few statements related to the subpoena served  
 23 on Mr. Wright by Ms. Choi and the party she represents in  
 24 this matter.  
 25 First of all, speaking to the Exhibit A to

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1 that subpoena calling for Mr. Wright to produce four  
 2 categories of documents, and I have some response to each of  
 3 those categories for the record so that both the parties  
 4 will know at what stage in the process of gathering these  
 5 records the university is.  
 6 As to item 1, it's my belief after searching,  
 7 or asking others to search at my request, those offices of  
 8 the university most likely to have any such documents  
 9 described in item 1, that the university has no such  
 10 documents responsive to that, with the exception of whatever  
 11 documents Dr. Smith has in his files related to that.  
 12 As to item 2, after checking with those  
 13 offices most likely to have any requests for a copy of that  
 14 grant application, it's my belief that the university in  
 15 fact has no documents evidencing or indicating that there's  
 16 been a prior -- any request prior to July 10, 1991, for  
 17 copies of that document under the Freedom of Information  
 18 Act.  
 19 As to item 3, I think that there are  
 20 documents not only in Dr. Smith's files, but documents  
 21 within the files of the office of technology transfer and  
 22 special projects that may be responsive to that request.  
 23 All of those documents may in fact be duplicates of those  
 24 documents contained in Dr. Smith's file, but I have not yet  
 25 had an opportunity to compare those and cannot state with

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1 certainty that existing documents responsive to item 3 are  
 2 all duplicates of what you've seen from Dr. Smith's files.  
 3 As to item 4, no effort has been made by the  
 4 university to this stage in trying to identify all U.S. or  
 5 foreign patents or pending patent applications which have  
 6 been funded in whole or in part by NIH grants from all of  
 7 its employees on all of its campuses and without regard to  
 8 date.  
 9 That was perceived by me to be a burdensome  
 10 and expensive task and prompted -- was in large measure  
 11 responsible for prompting the objections to the subpoena and  
 12 the submittal of those objections today to Ms. Choi prior to  
 13 the eleven o'clock deadline for producing those documents,  
 14 rather than undertaking that burdensome and expensive task.  
 15 I might say also that some of the items which  
 16 I have seen and which are responsive to Exhibit 3 are  
 17 believed by me and by Mr. Wright to be privileged  
 18 communications between attorneys and clients.  
 19 And in addition to that, some of those  
 20 documents are believed by me to be -- contain trade secrets  
 21 or other confidential information of a research, development  
 22 or commercial basis; and, therefore, deemed, in my review of  
 23 those documents, deemed confidential and privileged and not  
 24 subject to disclosure.  
 25 Is there anything else?

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1 MR. VEZEAU: Yeah, let me, Phil, to clarify  
2 on 3, it seems to me you're saying there are such documents  
3 but you believe they're privileged. Is that correct?  
4 MR. HOSKINS: I don't want to leave the  
5 impression that I believe all of the documents responsive to  
6 No. 3 are privileged. I believe that some of the documents  
7 responsive to No. 3 are privileged. And I believe that I've  
8 received copies of those documents from the office of  
9 technology transfer and special projects.  
10 They may or may not be entirely duplicative  
11 of records available through Dr. Smith's files. I have not  
12 yet had an opportunity to compare those documents. But I  
13 certainly know there are documents responsive to No. 3 found  
14 in files other than Dr. Smith's which are not privileged or  
15 claim to be privileged. That's the extent --  
16 MR. VEZEAU: Wait. There are documents that  
17 you're not claiming are privileged; is that correct?  
18 MR. HOSKINS: There are documents responsive  
19 to item No. 3 that I believe are not within any privilege.  
20 MR. VEZEAU: Okay. But you are not producing  
21 any or --  
22 MR. HOSKINS: No, none were produced today.  
23 MR. VEZEAU: Okay. Will you be producing  
24 those that you don't deem to be privileged?  
25 MR. HOSKINS: If we can reach agreement or if

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1 by order of the court we're compelled to do so, we will.  
2 We're exercising our rights under Rule 45(c) to object  
3 rather than produce those documents.  
4 MR. VEZEAU: I understand. All right. Well,  
5 Jane will certainly be in touch with you and see if there's  
6 something we can work out.  
7 MR. HOSKINS: Okay.  
8 MR. VEZEAU: Thank you.  
9 MR. HARTH: And there are no documents  
10 responsive to No. 2 that you're aware of?  
11 MR. HOSKINS: There are no documents  
12 responsive to No. 2 that I'm aware of, having checked with  
13 those offices of the University of Missouri-Columbia where  
14 those documents are most likely to exist.  
15 MR. HARTH: And is the same true for category  
16 No. 1?  
17 MR. HOSKINS: It's my belief, having checked  
18 with those offices most likely to have those documents, that  
19 there are none that exist other than those which have been  
20 produced to you by Dr. Smith.  
21 MR. HARTH: Thank you.  
22 Mr. Hoskins, Dr. Smith just produced a manila  
23 folder entitled "Banbury 4/90, Cloning Immune Response."  
24 And as part of that file, there are nine slides. Will you  
25 take custody of these slides and at our expense have these

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1 slides blown up onto paper copies?  
2 MR. HOSKINS: Do you have any objection to  
3 that?  
4 THE WITNESS: Oh, of course not.  
5 MR. HOSKINS: Sure, I'll do that.  
6 MR. HARTH: Is that acceptable to you? I'm  
7 trying to find a way to have a neutral third party take  
8 control of these slides and provide both sides with readable  
9 copies.  
10 MR. VEZEAU: That's -- well, I don't know  
11 that I have any basis to say one thing or another. I don't  
12 know what you mean by "acceptable," candidly. You said you  
13 were paying for it. That's always nice!  
14 MR. HARTH: All right.  
15 MR. BOOTH: We'll send you the bill, though!  
16 MR. HOSKINS: Now, one more thing for the  
17 record. I'm going to indicate for purposes of the record,  
18 it's approximately 1:30 p.m. I'm going to have to leave  
19 this deposition. And you have my permission to continue in  
20 my absence with Dr. Smith.  
21 And I have instructed him that if he runs  
22 into a question and he needs to seek legal advice in the  
23 middle, he may take time and call me for that consultation.  
24 MR. HARTH: Absolutely.  
25 MR. HOSKINS: Nice to meet you-all.

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1 MR. VEZEAU: Thank you.  
2 Dr. Smith, I also -- your counsel is leaving,  
3 but I don't know that we told you at the beginning of this,  
4 this is not -- I know it's -- you're very kind putting in a  
5 long day. But when you feel you need a break, you take it.  
6 You just tell us and we'll take time for it.  
7 THE WITNESS: (Nodding head.)  
8 (SMITH DEPOSITION EXHIBITS NOS. 11, 12, 13,  
9 and 14 WERE MARKED FOR IDENTIFICATION BY THE REPORTER.)  
10  
11 BY MR. HARTH:  
12 Q. Dr. Smith, I'm going to hand you what the court  
13 reporter has just marked as Smith Deposition Exhibit Nos.  
14 11, 12, 13, and 14. I'm going to hand you these exhibits,  
15 and the first thing I'd like to ask you is to confirm that  
16 these exhibits are copies, photocopies, of papers that were  
17 contained in the manila folder entitled "Banbury Conference  
18 4/90" that you handed us right before the break?  
19 MR. VEZEAU: But before you do that, may we  
20 see that so we can conform our copies to these -- no, the  
21 marked exhibits, so we can conform our copies? May we use  
22 your stapler, David? Thank you.  
23 That's 14?  
24 MS. CHOI: Uh-huh.  
25 THE WITNESS: Can you repeat the question?

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1 MR. HARTH: No, but she can.  
 2 (The reporter read the last question as  
 3 follows:  
 4 "QUESTION: Dr. Smith, I'm going to hand you  
 5 what the court reporter has just marked as Smith Deposition  
 6 Exhibit Nos. 11, 12, 13, and 14. I hand you these exhibits,  
 7 and the first thing I'd like to ask you is to confirm that  
 8 these exhibits are copies, photocopies, of papers that were  
 9 contained in the manila folder entitled "Banbury Conference  
 10 4/90" that you handed us right before the break?")  
 11 BY MR. HARTH:  
 12 A. That's correct.  
 13 Q. Where did -- where did you obtain the original  
 14 manila file from that you brought today?  
 15 A. My filing cabinet.  
 16 Q. And I think you said before the break that it was  
 17 your belief that Exhibit 11 contained the talking points of  
 18 your informal talk at that 4/90 Banbury Conference?  
 19 A. The first two pages of Exhibit 11 would be my  
 20 talking notes.  
 21 Q. All right. And what is the third page?  
 22 A. On the third page it looks like that is a, sort of  
 23 an outline, an earlier version of the talking notes. And  
 24 then -- so that would be the first third of that page.  
 25 And then underneath were notes from the meeting,

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1 from someone named Chaudhary that was -- who talked at that  
 2 meeting. So this was not really a very -- I just scribbled  
 3 those notes on the bottom of this page that had previously  
 4 used for -- as a -- to make an outline for the talk.  
 5 Q. All right. In looking at the first two pages, the  
 6 talking points, a number of the points have the word "slide"  
 7 to the right-hand. Do you see that?  
 8 A. Yes.  
 9 Q. What does that refer to?  
 10 A. That refers to the fact that there is a slide  
 11 associated with that talking point.  
 12 Q. And were those the slides that we just entrusted  
 13 to Mr. Hoskins?  
 14 A. The slides that you entrusted to Mr. Hoskins, I  
 15 would have to look in detail but probably included these  
 16 slides that are referred to here.  
 17 Q. All right.  
 18 A. And I would imagine they have other -- there are  
 19 other slides as well.  
 20 Q. Let's go through these talking points. And I'd  
 21 like you to elaborate to the extent you can what you were  
 22 speaking of. The first topic is fusion phage.  
 23 MR. VEZEAU: May I -- may I suggest that this  
 24 is going to be quite confused, David, until you establish,  
 25 one, recollection; and, two, if there's no recollection,

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1 then let's makes sense.  
 2 MR. HARTH: All right.  
 3 BY MR. HARTH:  
 4 Q. Have you had a chance to review these talking  
 5 points?  
 6 A. Yes, briefly.  
 7 Q. All right. And do these points on Exhibit 11  
 8 conform to your recollection of what you discussed at this  
 9 meeting?  
 10 A. Yes, they do.  
 11 Q. Turning to the first point, fusion phage, what  
 12 were discussing there?  
 13 A. This is a general description of the idea of what  
 14 is now called phage display. So that would describe how  
 15 foreign domains are displayed, fused to gene III protein on  
 16 the surface of filamentous phage.  
 17 And it says that as a preview -- as sort of an  
 18 introduction of what's going to be talked about later, that  
 19 among the things that I would like to display, that I wanted  
 20 to display, were single-chain antibodies. And that a  
 21 library displaying single-chain antibodies would be called  
 22 the paratope library.  
 23 But that first I was going to describe in a  
 24 simpler system how phage display could be used in the  
 25 context of an epitope library.

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1 Q. And that's your second point?  
 2 A. So the second talking -- the second main heading  
 3 was description of what an epitope library is.  
 4 Q. Why is Jimmy Scott's name --  
 5 A. Jamie Scott --  
 6 Q. -- boxed?  
 7 A. Jamie Scott was the post-doc in my lab who was  
 8 primarily responsible for the epitope library project. And  
 9 she was the one that constructed this epitope library.  
 10 Q. So you were giving her credit --  
 11 A. Yes, of course.  
 12 Q. -- mentioning her?  
 13 A. Right, yes.  
 14 Q. And then you also talked about biopanning?  
 15 A. Biopanning is the term that was used then for  
 16 affinity selection. And I credited Steve Parmley, who was  
 17 the graduate student in my laboratory who had worked out  
 18 that technology. So this -- under this heading, the general  
 19 idea of biopanning or affinity selection was described.  
 20 Q. All right. And what is the next heading? What  
 21 does that refer to?  
 22 A. This is monoclonal antibodies A and M. These are  
 23 two monoclonal antibodies from Lerner's lab at Scripps.  
 24 Terry Fieser is the scientist there who developed these  
 25 monoclonal antibodies. They were elicited by a protein

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<p>1 called myohemerythrin. And they're specific for a small 2 segment of that protein, an epitope, with the amino acid 3 sequence DFLEKI. That's what that DFLEKI refers to. 4 And then it goes on to describe what happened when 5 the epitope library that would contain a huge array of six 6 amino acid peptides, DFLEKI possibly being among them, was 7 affinity selected with these two monoclonal antibodies. 8 And the burden of the result was that they had in 9 common the DFL part of DFLEKI, although they differed in 10 other positions. But they were clearly related to the 11 DFLEKI epitope that originally elicited those antibodies. 12 Q. All right. 13 A. So this is describing what we regarded as a 14 success of the -- of epitope libraries. 15 Q. All right. And then the next topic is paratope 16 library. Will you tell us what you spoke about with respect 17 to paratope libraries? 18 A. Well, this part of the talk was the guts of the 19 talk, but it's entirely speculative. Paratope, as I have 20 said before, was a term for pared-down antibody. A single 21 chain antibody where you've sort of eliminated all the parts 22 of the antibody that aren't necessary to make the specific 23 binding contacts with the epitope on the antigen. 24 And so I -- this is a description of the idea of 25 what now would be called a phage antibody. So that's, I</p> <p style="text-align: center;">77</p>	<p>1 if anybody wouldn't fold, it would be possible to 2 potentially try to renature the antibody because the phage 3 were resistant to 6M urea at low pH, which would be 4 conditions that could allow the antibody chain to unfold. 5 And then by gradually allowing it to refold, potentially you 6 could restore binding activity to the antibody. This is a 7 hedge here, that second point. 8 Q. What about the next sub point degradation in 9 periplasm? 10 A. The burden of that argument was that mal-folded 11 proteins are vigorously degraded in the periplasm, which has 12 potent proteases. And I made the point that this is 13 probably desirable for this system because any antibody 14 chain that -- any single-chain antibody that didn't succeed 15 in folding correctly probably would be degraded and lost, so 16 it wouldn't be a sticky piece of protein that might give 17 rise to a high background of sticky non-specific binding. 18 Q. There's someone's name at the very bottom of the 19 page: Kathy...? 20 A. Strauch. She was, I believe, a post-doc in John 21 Beckwith's lab at Harvard. And she was the person that had 22 cloned and characterized periplasmic proteases in E. coli. 23 Q. All right. And then on the second page of Exhibit 24 11 there are a few more notations. Could you take us 25 through those?</p> <p style="text-align: center;">79</p>
<p>1 guess, the guts or the gist of this segment of the talk. 2 Q. How long did you talk? 3 A. Oh, the talks are maybe 15 to 20 minutes. I think 4 this was about 15 minutes. And there were five minutes of 5 questions. 6 Q. You have a question: "Will it fold right?" What 7 did you mean by that? 8 A. Well, the -- as Steve Parnley and I had shown in 9 the 1988 paper, large inserts, large peptide inserts or 10 peptides displayed on phage can be degraded. So we were 11 worried. I bought up as an issue in displaying single-chain 12 antibodies on phage that they may be subject to degradation 13 and may not fold correctly. 14 So the question of whether they would fold 15 correctly was one of the issues that needed to be 16 confronted in the design of what we were calling a paratope 17 library. 18 And I started by describing the protein on which 19 foreign domains are displayed, the pIII protein went through 20 the membrane. Although the word isn't down here, I would 21 have described it was in the periplasm. The periplasm was 22 an oxidizing environment that would be favorable for 23 folding, correct folding, of disulphide-bonded protein like 24 a single-chain antibody. 25 And then I mentioned under that same heading that</p> <p style="text-align: center;">78</p>	<p>1 A. Okay. The first one says Interference dash 2 Trypsin, and I don't know what I was talking about. 3 Q. All right. 4 A. Got me. 5 "In Vitro Evolution" referred to the idea that if 6 a single-chain antibody wouldn't fold very well on phage, 7 maybe you could mutagenize it in parts that don't have to do 8 with its specific binding to antigen to make it work better 9 in this context. 10 You could sort of adapt the single-chain antibody 11 frame -- the framework part, as it's called, the part that 12 doesn't actually make the specific contacts with antigen, 13 but that sort of holds the whole structure together so those 14 contacts can be made. 15 The idea was you might evolve those so that it 16 would adapt it to this unusual -- a sort of unusual 17 environment that differs from the natural way that 18 antibodies are produced in the mammalian cells inside the 19 body. 20 Q. What about "Making the Library"? 21 A. Okay. So I'm drawing a distinction here between a 22 model involving one particular single-chain antibody. In 23 our case, we were thinking of the fluorescein, the anti- 24 fluorescein antibody that Genex had converted into a 25 single-chain antibody.</p> <p style="text-align: center;">80</p>

1 Experiments involving one single antibody and  
 2 showing that that could be displayed and could have its  
 3 binding properties from making a library that would be  
 4 billions of different single-chain antibodies with different  
 5 binding specificities.  
 6 And the -- under Making the Library, the  
 7 subheading "Degenerate Synthetic Oligos" referred to the  
 8 idea that perhaps you could substitute for the short regions  
 9 of antibodies that actually are responsible -- mostly  
 10 responsible for specificity -- they're called complementary  
 11 determining regions or CDR's -- perhaps you could make  
 12 artificial antibodies that would have just random amino acid  
 13 sequences in that region encoded by random oligonucleotides  
 14 coding sequences that you can make chemically.  
 15 That's what that referred to. That was my  
 16 conception of what a phage antibody library might look like.  
 17 Q. Do you recall whether you got any questions?  
 18 A. I recall that I got questions, but I don't know  
 19 what they were.  
 20 Q. Okay. That was 14 years ago, so...  
 21 What is Smith Exhibit 12?  
 22 A. This is a schedule for the meeting. But what I  
 23 don't know here is whether this is the final schedule or  
 24 just a preliminary version that Juan Wikowski (phonetic)  
 25 sent to the participants. But it's a schedule of where the

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1 various sessions will be held.  
 2 Q. Do you recall at which session you gave your talk?  
 3 A. No.  
 4 Q. What is Smith Exhibit 13?  
 5 A. These are notes from the meeting. But I'm  
 6 really -- the first part of this is rather formal. So if  
 7 we -- let's see, if we -- the first two pages of this are  
 8 rather formal. This is not my style of writing notes, so  
 9 I'm, I'm not sure what these are.  
 10 Q. And how about Exhibit 14, what is that?  
 11 A. Let me take a minute to look through it.  
 12 This is a list of the participants with their  
 13 addresses. I was hesitating because I think that -- I just  
 14 wanted to make sure this is the final list of participants,  
 15 and I believe this is the final list of participants.  
 16 Q. Did all the participants attend all of the  
 17 sessions, or were there breakouts, or how did that work?  
 18 A. No, there were no breakouts. I, of course,  
 19 couldn't tell you whether all participants went to all  
 20 sessions. But, certainly, most participants went to most  
 21 sessions because there wasn't anything else to do.  
 22 Q. All right. How many people do you remember being  
 23 present for your talk, approximately?  
 24 MR. VEZEAU: Objection, lack of foundation.  
 25 BY MR. HARTH:

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1 A. I can't visualize it.  
 2 Q. All right.  
 3 A. Twenty or more, let's put it that way.  
 4 Q. As I recall the testimony you -- well, strike  
 5 that.  
 6 Did you have any private conversations with  
 7 various participants during the course of this meeting?  
 8 A. Certainly.  
 9 Q. And isn't that one of the purposes of these  
 10 Banbury conferences, to permit private conversations between  
 11 participants?  
 12 MR. VEZEAU: Objection --  
 13 A. Yes.  
 14 MR. VEZEAU: -- leading.  
 15 BY MR. HARTH:  
 16 Q. Do you recall having any private conversations at  
 17 the Banbury Conference with respect to phage antibodies?  
 18 A. I would have a hard time remembering specific  
 19 conversations. I can't imagine I didn't, but I can't recall  
 20 specific conversations.  
 21 Q. All right.  
 22 (SMITH DEPOSITION EXHIBIT NO. 15 WAS MARKED  
 23 FOR IDENTIFICATION BY THE REPORTER.)  
 24 \_\_\_\_\_  
 25 BY MR. HARTH:

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1 Q. Let me show you what we've marked as Smith Exhibit  
 2 15 and ask whether you recognize that document?  
 3 A. This is, I guess, a summary of a poster exhibit  
 4 that Jamie Scott gave at the -- Jamie Scott, who was a  
 5 post-doc in my lab at the time, working on what we called  
 6 the epitope library -- that she gave at the Miami Winter  
 7 Symposium. I guess she gave it on January 25 of 1990.  
 8 Q. Did you attend that symposium?  
 9 A. No.  
 10 Q. But Dr. Scott did?  
 11 A. Yes.  
 12 Q. Would you look at page M081890, page headed  
 13 "Introduction"?  
 14 A. Yes.  
 15 Q. And the last paragraph reads as follows: "The  
 16 study presented here serves as a model system to test  
 17 whether monoclonal antibodies, which are known to bind a  
 18 number of related hexapeptide sequences, will do so when  
 19 they are displayed as part of a fUSE phage coat."  
 20 Do you see that?  
 21 A. Yes.  
 22 Q. The sentence is, at least to me, ambiguous as to  
 23 what "they" refers to on the second line from the bottom.  
 24 That is, whether it refers to monoclonal Abs or hexapeptide  
 25 sequences.

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<p>1 A. "They" there refers to hexapeptide sequences.  2 Q. Did Jamie Scott ever tell you that she told Cesar  3 Milstein about your single-chain antibody idea at the Miami  4 Symposium?  5 MR. VEZEAU: Objection, lack of foundation  6 and leading.  7 BY MR. HARTH:  8 A. Yes.  9 Q. What did she tell you?  10 A. I can't remember exactly. She just said that she  11 had talked to Cesar Milstein about the idea of a phage  12 antibody, what now are called phage antibodies.  13 Q. Did she tell you what his reaction or response  14 was?  15 MR. VEZEAU: Objection, lack of foundation  16 and hearsay.  17 BY MR. HARTH:  18 A. I can't remember.  19 Q. Do you recall whether she mentioned talking to  20 anyone else at the Miami Symposium about phage antibodies?  21 A. No, I can't remember anyone else.  22 Q. William Dower's name appears on the poster paper,  23 Smith Exhibit 15. Was he involved in your work at this  24 time?  25 A. We -- I've got to tell you that I'm not sure why</p> <p style="text-align: center;">85</p>	<p>1 Q. And you say you called him right after you read  2 his article?  3 A. Yes.  4 Q. Did you tell him about your idea during that first  5 call?  6 A. Yes.  7 Q. And there were subsequent discussions with him?  8 A. Yes.  9 MR. HARTH: Would you make this, please.  10 (SMITH DEPOSITION EXHIBIT NO. 16 WAS MARKED  11 FOR IDENTIFICATION BY THE REPORTER.)  12  13 BY MR. HARTH:  14 Q. I've handed you Smith Exhibit 16. Do you  15 recognize that document?  16 A. I believe this is just a summary of my schedule of  17 a visit that I had to Genex Corporation.  18 Q. When was that visit?  19 A. Well, this memo is dated January 5, 1989. And  20 that would make sense as to when I got there, when I went  21 there. I don't have independent verification of the time.  22 Q. All right. Do you remember making a visit to  23 Genex?  24 A. Oh, yes.  25 Q. Where is Genex located?</p> <p style="text-align: center;">87</p>
<p>1 his name is on this abstract. But in a general way, we  2 certainly cooperated with their group; for example, by  3 supplying the vector parent for phage display that they used  4 as well as we used. I mean, they made their own vector  5 from it. The parent was a phage construct called fd Tet.  6 And we talked on the phone. In a general way, we cooperated  7 with Bill Dower.  8 Q. Are you saying that Bill Dower or Affymax supplied  9 you with fd Tet?  10 A. Oh, no, we supplied him with fd Tet.  11 Q. Okay.  12 A. But, as I said, I don't know why he's on here  13 because generally we hadn't formally -- he hadn't been a  14 formal member of -- you know, like authorship. I'm not sure  15 why he's on this poster. I don't recollect.  16 Q. Did you ever discuss with William Dower phage  17 antibodies?  18 A. I don't know. I don't remember.  19 Q. Did you ever discuss phage antibodies with Dr.  20 Bird?  21 A. Doctor...?  22 Q. Dr. Bird?  23 A. Dr. Bird?  24 Q. Yeah.  25 A. Oh, yeah. Oh, yes.</p> <p style="text-align: center;">86</p>	<p>1 A. It's in, I guess -- well, at that time it was in  2 Bethesda or Gaithersburg. Gaithersburg, probably, something  3 like that. Around Washington, D.C.  4 Q. Did you address a group while you were at Genex?  5 A. I don't recall. I don't think so, but I don't  6 know for sure.  7 Q. The exhibit has you meeting with different people  8 on the half hour.  9 A. Uh-huh.  10 Q. Do you remember doing that?  11 A. Yes.  12 Q. The exhibit also says that you are going to be  13 here -- "here" being Genex -- "to discuss the possibility of  14 expressing a single-chain antibody as part of a phage coat  15 protein." Do you see that?  16 A. Yes.  17 Q. And did you in fact discuss that topic while you  18 were at Genex?  19 A. Yes.  20 Q. What do you remember discussing in that regard?  21 MR. VEZEAU: Objection, lack of foundation.  22 BY MR. HARTH:  23 A. Well, the things I can specifically remember is  24 talking with Ann Rose about what kinds of commercial, you  25 know, patent protection agreements and things would have to</p> <p style="text-align: center;">88</p>

1 be put in place. She was the person responsible for that  
2 aspect of the company.

3 Q. Put in place in order to do what?

4 A. In order to -- for the company and the University  
5 of Missouri to collaborate on this research.

6 That was maybe the first time I talked to her.

7 And then I certainly talked with Bob Bird at  
8 length about, you know, how you would design a vector.  
9 Maybe we -- I -- it would be speculation. I'm not -- I do  
10 know we definitely talked about, in some detail, about how  
11 you would design a phage display of their single-chain  
12 antibody.

13 Q. All right.

14 A. So I -- and I'm afraid that I can't remember  
15 specifically what we talked about in the other meetings that  
16 we had there.

17 Q. Were there other meetings?

18 A. No, this -- I believe I met with all these  
19 people --

20 Q. Oh, I see what you're saying.

21 A. -- that are on the schedule.

22 Q. All right. Was there any agreement,  
23 confidentiality agreement or otherwise, in place with Genex  
24 prior to your trip there in January?

25 A. I don't know.

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1 A. Yes.

2 Q. Did you have any written materials that you used  
3 during your meetings at Genex, do you recall?

4 A. I don't remember.

5 Q. Did you designate any of the information that you  
6 communicated during your visit to Genex as being  
7 confidential information under the terms of this agreement?

8 A. No, I didn't. Not that I can recall.

9 Q. In the foreword that you wrote to "Phage Display  
10 of Peptides and Proteins," you talk about the closing of the  
11 eventful year of 1988 and on December 15 of 1988, sitting in  
12 Jim Larrick's office at Genelabs, Inc. Do you have a  
13 recollection of meeting with Dr. Larrick?

14 A. Yes.

15 Q. Where is Genelabs, Inc.?

16 A. It's in the Bay Area. I can't remember what the  
17 town is, but it's in the Bay Area.

18 Q. During the course of your meeting with Dr.  
19 Larrick, did you discuss phage antibodies with him?

20 A. I don't believe so, no.

21 Q. What were you discussing?

22 A. Drugs. His idea, which I really had not focused  
23 on before, was that peptide antibodies could be used as a  
24 way of finding leads for drugs; peptides that bind receptors  
25 would be potential leads to new classes of drugs. That was

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1 MR. VEZEAU: There is an agreement in the --

2 THE WITNESS: Maybe you know. Maybe you know  
3 because I haven't looked at this folder for a long time.

4 MR. VEZEAU: Are you aware of this? It's --  
5 one of the documents Dr. Smith produced is a January 5,  
6 1989, confidential disclosure agreement with Genex.

7 MR. HARTH: Is that in the pile?

8 MR. VEZEAU: Yeah.

9 (SMITH DEPOSITION EXHIBIT NO. 17 WAS MARKED  
10 FOR IDENTIFICATION BY THE REPORTER.)

11

12 BY MR. HARTH:

13 Q. I'm going to hand you what we've marked as Smith  
14 Exhibit 17. I'd ask you to take a look at that and tell me  
15 whether that refreshes your recollection as to the existence  
16 of a confidentiality agreement?

17 A. I believe there -- it's very plausible that there  
18 -- it's obviously plausible there was a confidentiality  
19 agreement, and this would seem to indicate there is. It  
20 doesn't contradict my memory.

21 Q. All right. And is this your signature on --

22 A. Yes.

23 Q. -- on the second page?

24 A. It is.

25 Q. Did Genex prepare this agreement?

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1 the basic tenor of that.

2 Q. All right. On both the November 1988 grant  
3 application, which I'll ask you to dig out, and the  
4 application for continuation grant, there is a box on the  
5 form which appears at the front page. Item 11, "Inventions  
6 (see instructions)," no and yes?

7 A. Uh-huh.

8 Q. Do you see that?

9 A. Yes.

10 Q. Is it a fact that you checked the "no" box with  
11 respect to --

12 A. Yes.

13 Q. -- your November 1988 grant?

14 A. Yes.

15 Q. And you also checked the "no" box with respect to  
16 your application for the continuation grant on Exhibit 8?

17 A. Yes.

18 Q. What was the significance of checking that box, to  
19 you?

20 A. The significance was that we did not feel we had  
21 anything -- we had developed something that we wanted to  
22 consider as an invention.

23 (SMITH DEPOSITION EXHIBIT NO. 18 WAS MARKED  
24 FOR IDENTIFICATION BY THE REPORTER.)

25

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1 BY MR. HARTH:

2 Q. I've handed you what we've marked as Smith  
3 Deposition Exhibit 18. Can you identify this document?

4 A. It's a cover letter that we sent with preprints of  
5 the paper by Jamie Scott and me that was to be -- was going  
6 to be published in "Science" in 1990.

7 And the purpose of the letter was to spell out  
8 what our policy was going to be about distributing libraries  
9 and vectors and things like that because we knew there was  
10 going to be an increase in interest in obtaining these  
11 materials.

12 Q. How did you know that?

13 A. How did we know?

14 Q. Yeah.

15 A. Well, we guessed.

16 Q. Okay. Were you right?

17 A. Yes.

18 Q. Do you still have a copy of the pre-print, by any  
19 chance, back in your office?

20 A. It's possible. I don't know.

21 Q. I will put that in the letter and ask that you  
22 check on that.

23 Now, the libraries that you were distributing were  
24 the epitope libraries, correct?

25 A. Okay. Well, what we've -- what we say in item 2

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1 MR. VEZEAU: Before you do that, these  
2 documents are designated highly confidential under the  
3 protective order.

4 MR. HARTH: Well, I think if you listen to  
5 the testimony that's forthcoming, you'll realize that it  
6 meets one of the exceptions in the protective order.

7 MR. VEZEAU: What's the exception?

8 MR. HARTH: This is his document.

9 MR. VEZEAU: Okay.

10 Which ones -- which one is -- let me see  
11 these so I can conform these.

12 MR. HARTH: That's 19. That's 19.

13 MR. VEZEAU: The two-page?

14 MR. HARTH: Uh-huh.

15 BY MR. HARTH:

16 Q. Can you identify what I've just handed you as  
17 Exhibit 19?

18 A. Well, it would be one of our manuals, what we call  
19 the manual, which is a set of protocols for how to use  
20 filamentous phage display vectors, the fUSE vectors. I  
21 think we called it the fUSE vector or - yeah, cloning and  
22 fUSE vectors.

23 I don't know if this is the same version, if

24 Exhibit 19 is the same version as Exhibit 20.

25 Q. Was there a version that existed at the time of

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1 is that "We will make our strains and general protocols...  
2 available." And --

3 Q. I'm talking about No. 3, "a limited amount of" --

4 A. Yes.

5 Q. -- "library"?

6 A. Yeah. Okay. So in item 3 we say that we will  
7 distribute a small amount of the library to some people.  
8 But we're making the point that we're not making that  
9 generally available because we only had a limited supply at  
10 the time.

11 Q. You're talking about the epitope library, correct?

12 A. That would be the epitope library that Jamie Scott  
13 constructed in my lab, yes.

14 MR. VEZEAU: Is this one exhibit? two  
15 exhibits? or what?

16 MR. HARTH: Two exhibits.

17 MR. VEZEAU: Do you know which ones?

18 MR. HARTH: Yes, I do.

19 MR. VEZEAU: Okay.

20 MR. HARTH: You will soon.

21 (SMITH DEPOSITION EXHIBITS NOS. 19 AND 20  
22 WERE MARKED FOR IDENTIFICATION BY THE REPORTER.)

23

24 BY MR. HARTH:

25 Q. I'm showing you Exhibit 19.

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1 your March 27, 1990, "Dear Colleague" letter?

2 A. Yes. Yeah, there was.

3 Q. And Exhibit 20 has a date subsequent to that?

4 A. Yes.

5 Q. I don't think you've identified Exhibit 20 yet.  
6 What is Exhibit 20?

7 A. Okay. Exhibit 20 is the first page of an updated  
8 version of what we called the manual. And this would have  
9 been a couple years after that 1990 letter cover letter that  
10 was Exhibit 18.

11 Q. All right.

12 A. And I think that Exhibit 18 would refer to a  
13 version of the manual that was between -- that was -- that  
14 preceded this February 10, 1992, version that is Exhibit 20.

15 Q. Is that the version that's reflected in Exhibit  
16 19?

17 A. I don't know. I don't think so, though.

18 Q. Was there another version somewhere?

19 A. I don't know which one -- which version Exhibit 19  
20 is. Exhibit 20 is -- it's actually the latest version that  
21 we made before we put our protocols on the internet.

22 Q. All right. But there were earlier versions?

23 A. Yes. There were -- before the version, the  
24 February 10, 1992, version, which is exhibit -- the first  
25 page of which is Exhibit 20, I think there was a version

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1 around 1990, the middle of 1990.  
 2 Q. All right.  
 3 A. But I would have to go back to our records to find  
 4 that.  
 5 Q. And then was there an even earlier version that  
 6 existed at the time you wrote the March 27, 1990, letter?  
 7 A. Yes. There was a version in 1989.  
 8 Q. All right. So there is a 1989 version, a mid-1990  
 9 version --  
 10 A. I believe so, yes.  
 11 Q. -- and then the February '92 version?  
 12 A. Yes.  
 13 Q. And after that it went on the web?  
 14 A. We lived with this one for many years and...  
 15 Q. Do you, do you have still copies of the three  
 16 versions of the manual?  
 17 A. I know I have the 1989 version and I have the 1992  
 18 version; and I don't know about the 1990 version, assuming  
 19 there is one.  
 20 Q. All right. I will ask you to provide us with all  
 21 versions that you're able to get your hands on.  
 22 Did you discuss phage antibodies at any other  
 23 conferences or symposia prior to, say, the end of 1990? And  
 24 when I say "other," other than the Banbury Conference in  
 25 April of '89 and the departmental seminar in '89?

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1 A. So the Banbury Conference was April of 1990.  
 2 Q. '90, I'm sorry.  
 3 A. I don't remember specifically.  
 4 Q. Generally?  
 5 MR. VEZEAU: I object --  
 6 A. I don't remember generally.  
 7 MR. VEZEAU: I object to that. I don't know  
 8 what that means.  
 9 BY MR. HARTH:  
 10 Q. Do you remember discussing phage antibodies with  
 11 any other scientists, perhaps not as part of a formal  
 12 presentation, but informally?  
 13 A. Yes, I remember -- you're going to be asking about  
 14 the same period, before the end of 1990?  
 15 Q. Yes.  
 16 A. Oh, I can't remember specifically. I just don't  
 17 know.  
 18 Q. When you say you don't know, are you recalling  
 19 something you don't know when the date was?  
 20 A. Yes.  
 21 Q. What do you recall?  
 22 A. I know I had at least a couple of phone  
 23 conversations about phage antibodies.  
 24 Q. With whom?  
 25 A. I don't know. I can't tell you specifically.

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1 Q. Do you know the affiliations of the persons that  
 2 you talked to?  
 3 A. I can't be sure, no.  
 4 Q. Do you know if you ever talked with anyone from  
 5 Cambridge Antibody Technology about phage antibodies?  
 6 A. Well, I mean, ultimately, of course.  
 7 Q. During --  
 8 A. But during that period --  
 9 Q. Yeah.  
 10 A. -- I can't say. I don't know.  
 11 Q. Did you ever directly supply fd Tet to anyone  
 12 other than Dr. Dower?  
 13 A. Yes, to many people. Oh, fd Tet?  
 14 Q. Yeah.  
 15 A. Oh, yeah, well, to many people.  
 16 Q. Okay. Now, at some point was that deposited with  
 17 the American Type Cell Collection?  
 18 A. American Type Culture Collection.  
 19 Q. Culture Collection.  
 20 A. Yes, it was.  
 21 Q. Did you receive any notification from the ATCC  
 22 when another scientist would request a sample from what you  
 23 had deposited?  
 24 A. I don't remember.  
 25 Q. Do you recall ever having provided yourself or

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1 your lab fd Tet to any of the scientists with Cambridge  
 2 Antibody Technology or the Winter Lab?  
 3 A. I don't recall specifically.  
 4 Q. I'm going to show you what was marked as Exhibit  
 5 20 from the deposition of Dr. Brian Kay. Why don't you just  
 6 take a minute and take a look at that.  
 7 A. Okay.  
 8 Q. Do you recognize the second page of this exhibit?  
 9 A. This is -- I can't remember exactly where this --  
 10 this is a foreword to another book, right? It's -- but I --  
 11 can you refresh my memory?  
 12 MR. VEZEAU: Well, the -- you ought to answer  
 13 his question first and then he'll work on that. The  
 14 question was, do you remember?  
 15 BY MR. HARTH:  
 16 Q. Take a second to look at it.  
 17 A. Well, it's a foreword to a book. And I -- I'm  
 18 afraid I can't remember which one it is.  
 19 Q. All right. And I think I can refresh --  
 20 A. It's the same one?  
 21 Q. Right.  
 22 A. All right. Okay. All right. Certainly the same  
 23 language. Okay.  
 24 Q. There is a sentence about a quarter of the way  
 25 down the page. It starts, "The new idea..." Do you see

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1 that?  
 2 A. Uh-huh.  
 3 Q. "The new idea, which I dubbed 'infectious  
 4 antibodies' (now called phage antibodies), became a key  
 5 aspect of the new grant proposal I submitted to the NIH on  
 6 November 1, 1988."  
 7 A. Uh-huh.  
 8 Q. I will represent to you that that sentence did not  
 9 make it into the published foreword.  
 10 A. Uh-huh.  
 11 Q. And my question to you is, do you recall having  
 12 conversations with anyone with respect to editing out this  
 13 sentence?  
 14 A. I don't. I don't recall. I might have, but I  
 15 don't recall.  
 16 Q. Do you recall any recollection of discussing your  
 17 foreword with Dr. Kay?  
 18 A. I don't.  
 19 Q. Did you receive a copy of the book after it was  
 20 published?  
 21 A. Yes. Yes, I did.  
 22 Q. Did you realize that a sentence had been edited  
 23 out of the foreword?  
 24 A. No, I didn't realize.  
 25 Q. Have you ever known about that until the last

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1 couple of days?  
 2 A. I didn't remember anything about it, no.  
 3 Q. Were you even aware of it before yesterday?  
 4 A. I may well have been, but I don't remember now.  
 5 Q. Okay.  
 6 (SMITH DEPOSITION EXHIBIT NO. 21 WAS MARKED  
 7 FOR IDENTIFICATION BY THE REPORTER.)  
 8 \_\_\_\_\_  
 9 Q. Dr. Smith, you had testified earlier that you had  
 10 sent --  
 11 MR. VEZEAU: What is this you placed in front  
 12 of the witness? Excuse me.  
 13 BY MR. HARTH:  
 14 Q. -- that you had sent out your laboratory notebooks  
 15 concerning the first display of the anti-fluorescein  
 16 fragment on phage?  
 17 A. Uh-huh.  
 18 Q. You have to say yes or no. I'm sorry.  
 19 A. Yes. Yes. I'm sorry.  
 20 Q. Who did you send those notebooks to?  
 21 A. I sent them to Jorge Goldstein, who was in this  
 22 firm of Sterne Kessler Goldstein & Fox. And they were  
 23 representing at the time Enzon, who were trying to -- trying  
 24 to support what the patent that originally Genex had filed  
 25 for displaying domains, including single-chain antibodies,

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1 on living things.  
 2 Q. What happened to those notebooks?  
 3 A. They were lost in the mail.  
 4 Q. How do you know that?  
 5 A. Well, of course, when they didn't appear at the  
 6 firm, we called up Mr. Goldstein and asked about them. And  
 7 he said he never received them and he would go to their  
 8 mailroom -- apparently, they have a systematic -- a system  
 9 for checking in mail -- to find if anything had been checked  
 10 in. And nothing had.  
 11 So we filled out this complaint to the post  
 12 office. But nothing has been -- they never succeeded in  
 13 finding anything.  
 14 I believe we also pursued this on the phone with  
 15 the post office, talking with people.  
 16 Q. I've handed you what with we've marked as Smith  
 17 Exhibit 21, which is a copy of a document from your files.  
 18 What is this exhibit?  
 19 A. This is a complaint form from the post office, and  
 20 this was filled out by Robert Davis, my tech. He's also the  
 21 person that wrote the -- that packed the materials and sent  
 22 them in the first place.  
 23 Q. All right. And this form reports a loss in the  
 24 mail, is that the idea?  
 25 MR. VEZEAU: Objection, lack of foundation

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1 and leading.  
 2 BY MR. HARTH:  
 3 Q. You can answer.  
 4 A. Yes, it reports a loss in the mail.  
 5 Q. The form indicates that the article was mailed  
 6 March 29, 1996. Do you see that?  
 7 A. Yes.  
 8 Q. Is that accurate to your knowledge?  
 9 A. It would -- yes.  
 10 Q. Have you ever located those notebooks since they  
 11 were mailed?  
 12 A. No, we have not.  
 13 Q. Have you ever received notification from the  
 14 United States Department of Health and Human Services that  
 15 copies of your November '88 grant application had been  
 16 requested by third parties under the Freedom of Information  
 17 Act?  
 18 A. Yes, I have received such -- I have received such  
 19 notifications.  
 20 (SMITH DEPOSITION EXHIBIT NO. 22 WAS MARKED  
 21 FOR IDENTIFICATION BY THE REPORTER)  
 22 \_\_\_\_\_  
 23 BY MR. HARTH:  
 24 Q. I'm showing you what we've marked as Exhibit 22.  
 25 Can you identify that document?

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1 MR. VEZEAU: Well, that question lacks a  
2 proper foundation.  
3 BY MR. HARTH:  
4 Q. Have you ever seen this document before?  
5 A. I can't remember it. I think I have, but --  
6 Q. All right. Do you see at the --  
7 A. I filed it probably.  
8 Q. Do you see at the end of the third paragraph the  
9 sentence, "A copy of this letter has also been sent to  
10 George Smith"?  
11 A. Uh-huh.  
12 MR. VEZEAU: Dr. Smith, you'll note there is  
13 a number at the bottom. That's document produced by  
14 MorphoSys. That is not from your files.  
15 THE WITNESS: Oh, it isn't? Okay.  
16 BY MR. HARTH:  
17 Q. No, it is not and I don't mean to suggest that it  
18 is.  
19 A. Okay. Well, all right, so can I just amend that  
20 to say that I don't specifically know that I've seen this  
21 particular request.  
22 Q. Have you seen similar requests?  
23 A. Yes.  
24 Q. Do you know how many such requests, approximately,  
25 you've been notified of over the years?

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1 A. No.  
2 Q. Less than ten?  
3 A. Probably less than ten.  
4 Q. All right. And do you know when the first such  
5 request was made?  
6 A. No.  
7 Q. Do you know if any requests were made prior to  
8 February 24, 1994?  
9 A. I can't say.  
10 Q. All right. Did you ever reply to any of these  
11 requests?  
12 A. No.  
13 Q. Did you ever --  
14 A. Oh, sorry. I'm not sure of that. I never replied  
15 that I wanted to remove any materials. But I might have  
16 replied to the effect that it's okay to release the whole  
17 thing.  
18 Q. That was going to be my next question. Did you  
19 ever, in response to any of these requests, ask that any  
20 portion of your grant application be redacted?  
21 A. No.  
22 Q. If you had received a request or a notification  
23 from Health and Social Services similar to Exhibit 21 back,  
24 say, in March of 1990, would you at that time have requested  
25 that any part of it be redacted?

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1 MR. VEZEAU: Objection, calls for  
2 speculation, lack of foundation.  
3 BY MR. HARTH:  
4 A. No, I wouldn't have.  
5 Q. Why not?  
6 A. It just wasn't my policy. I was also talking  
7 freely about the technology, so I wouldn't have seen any  
8 point to.  
9 MR. HARTH: Why don't we take a short break.  
10 I think I'm just about, if not, done with my questioning.  
11 But I want to consult with my colleague.  
12 (Recess.)  
13  
14 MR. HARMON: Back on record.  
15 MR. HARTH: Dr. Smith, I have no further  
16 questions for you at this time.  
17 Mr. Vezeau, I'd ask that you leave me about  
18 20 minutes for any redirect.  
19 MR. VEZEAU: I'll see how we go with that. I  
20 just can't make any promises right now, David.  
21  
22 EXAMINATION BY MR. VERZEAU:  
23 Q. Dr. Smith, would you want to take a short break  
24 and take a walk or what's your preference? You tell me.  
25 A. My preference is we go on.

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1 Q. Okay. So that's exactly what we'll do then. I do  
2 have some questions.  
3 First of all, when was the first time you met  
4 either Mr. Harth or Mr. Booth?  
5 A. Mr. Booth, I met in probably November of 1999.  
6 It's around that time.  
7 Q. Did he represent you as an attorney?  
8 A. Mr. Booth represent me as an attorney?  
9 Q. Yes. Did he?  
10 A. No, no.  
11 Q. Okay. What was the occasion of you meeting him?  
12 A. It was this lawsuit and -- I think -- I think the  
13 idea was that I would be a witness for the -- an expert  
14 witness. I'm not sure actually the exact, what the exact  
15 subject was.  
16 Q. An expert witness for MorphoSys?  
17 A. Yeah. I hope I've got this right.  
18 Q. How many times in 1999 did you meet with Mr.  
19 Booth?  
20 A. Once.  
21 Q. Once?  
22 A. I believe so.  
23 Q. Okay. Did you meet with anyone else from  
24 MorphoSys in 1999 or earlier concerning the McCafferty  
25 patent or the Griffiths patent, either U.S. or European

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1 versions?  
 2 A. I can't recall specifically, so I don't know.  
 3 Q. Do you believe you did?  
 4 A. I don't want to speculate on whether I talked to  
 5 them. I just don't know.  
 6 Q. Do you remember Dr. Virnekas?  
 7 A. I don't specifically remember talking with Dr.  
 8 Virnekas.  
 9 Q. Do you recall receiving correspondence from Dr.  
 10 Virnekas?  
 11 A. I don't recall. I really cannot recall  
 12 specifically.  
 13 Q. Do you know who Dr. Virnekas is?  
 14 A. I -- he's one of the scientists at MorphoSys.  
 15 Q. And do you know he's in charge of their  
 16 intellectual property at MorphoSys?  
 17 A. I believe I know that now. Whether I knew it  
 18 then, I don't know.  
 19 Q. Have you ever met Dr. Virnekas?  
 20 A. I might have, but I don't know.  
 21 Q. Okay. Have you corresponded with Dr. Virnekas  
 22 either in paper form or electronic form?  
 23 A. I might have, but I have no records of that and I  
 24 cannot say for sure.  
 25 Q. Do you believe you had e-mail correspondence with

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1 anyone representing MorphoSys?  
 2 A. I don't -- I really can't recall specifically. I  
 3 mean, I -- so I don't think I would -- I prefer not to  
 4 answer a question about whether I believe or not.  
 5 MR. VEZEAU: I'll ask the reporter to mark  
 6 for identification as Defendant's Deposition Exhibit 313 a  
 7 document produced by MorphoSys in this litigation. What I  
 8 will do is just mark it now; you can put a label over it.  
 9 And Dr. Smith will hold onto it. That might expedite this.  
 10 Is that all right?  
 11 THE REPORTER: That's fine.  
 12 MR. VEZEAU: Okay.  
 13 (DEFENDANT'S DEPOSITION EXHIBIT NO. 313 WAS  
 14 MARKED FOR IDENTIFICATION BY MR. VEZEAU.)  
 15  
 16 BY MR. VEZEAU:  
 17 Q. All right. Dr. Smith, I'll hand you Defendant's  
 18 Deposition Exhibit 313. This also bears a MorphoSys  
 19 production number M11801. I'll ask you to please review  
 20 that because I will have a question or two.  
 21 A. Okay. I -- okay.  
 22 Q. Have you read it?  
 23 A. Not -- no.  
 24 Q. Okay, maybe you should.  
 25 A. Okay.

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1 Q. You've now read it?  
 2 A. Yes.  
 3 Q. Does that refresh your recollection at all about  
 4 meeting Dr. Virnekas?  
 5 A. Yes. Evidently, I met him in that phage,  
 6 so-called phage club meeting in Smolenice.  
 7 Q. All right. And Dr. Virnekas, in paragraph 2,  
 8 says, "When I discussed the phage display patent issues you  
 9 mentioned inter alia the NIH grant you had at that time, but  
 10 you expressed your wish not to get involved in this patent  
 11 dispute, and I definitely wanted to respect that."  
 12 Do you recall that discussion?  
 13 A. Vaguely, I recall that discussion.  
 14 Q. What do you recall?  
 15 A. Expressing exactly that point.  
 16 Q. Which was...?  
 17 A. That I was not going to be a witness for either  
 18 side, an expert witness.  
 19 Q. Now, in the second-to-the-last paragraph starting  
 20 "In the meantime..." --  
 21 A. Uh-huh.  
 22 Q. -- Dr. Virnekas mentions an attempt to get  
 23 information from the NIH via the Freedom of Information  
 24 Office, and he states -- this is Dr. Virnekas speaking --  
 25 "I was informed that, at least as far as I understood, the

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1 Office would ask the Principal Investigator whether or to  
 2 what extent he allows giving access. Therefore,  
 3 unfortunately, it might happen that they will bother you."  
 4 Do you know if, indeed, you were contacted by the  
 5 Freedom of Information Office, you or the University of  
 6 Missouri, in connection with any request to have access to  
 7 your grant proposal by MorphoSys?  
 8 A. I don't specifically recall. My usual response to  
 9 those requests was simply to ignore them, which would mean  
 10 that I did not withhold any materials.  
 11 MR. VEZEAU: I'll ask -- will you get another  
 12 copy?  
 13 I'll ask the reporter to mark for  
 14 identification as Defendant's Deposition Exhibit 314 another  
 15 document from the files of MorphoSys bearing production  
 16 numbers M81978 and 81979.  
 17 (DEFENDANT'S DEPOSITION EXHIBIT NO. 314 WAS  
 18 MARKED FOR IDENTIFICATION BY MR. VEZEAU.)  
 19  
 20 BY MR. VEZEAU:  
 21 Q. I'll hand you Defendant's Deposition Exhibit 314  
 22 and ask you to please review that and let me know if you  
 23 indeed received this document.  
 24 A. All right. This is nineteen -- the date of this  
 25 letter is August of 1999?

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<p>1 Q. Yes.</p> <p>2 A. You know, I don't know if I responded to this</p> <p>3 with, for example, that folder. I can't remember. Did</p> <p>4 you -- well.</p> <p>5 Q. This came from the files of MorphoSys, not your</p> <p>6 files.</p> <p>7 A. Right. I know. I'm just wondering if you found</p> <p>8 something in my files that responded --</p> <p>9 Q. No, I didn't.</p> <p>10 A. -- to this one?</p> <p>11 Q. And that's why I'm asking you.</p> <p>12 A. I don't remember responding to this.</p> <p>13 Q. Had you informed Dr. Virnekas that, at least to</p> <p>14 your way of understanding, the discussions at the Banbury</p> <p>15 Conference were confidential?</p> <p>16 MR. HARTH: Objection, leading.</p> <p>17 MR. VEZEAU: Of course. This is cross.</p> <p>18 MR. HARTH: He's not an adverse witness, he's</p> <p>19 not a hostile witness.</p> <p>20 MR. VEZEAU: This is -- all right, you stated</p> <p>21 your objection, Mr. Harth. Let's --</p> <p>22 THE WITNESS: So your question is...?</p> <p>23 MR. VEZEAU: Do you want to hear it again?</p> <p>24 THE WITNESS: Could you read that question?</p> <p>25 (The reporter read the last question as</p> <p style="text-align: center;">113</p>	<p>1 A. Uh-huh.</p> <p>2 Q. And that he was responsible and interested in</p> <p>3 identifying prior art which could help his company to attack</p> <p>4 some patents or patent applications in the field. Do you</p> <p>5 see that?</p> <p>6 A. Uh-huh. Uh-huh. Yes.</p> <p>7 Q. Did he ask you or did anyone else from MorphoSys</p> <p>8 ask you to assist in connection with the litigation against</p> <p>9 Cambridge Antibody Technology?</p> <p>10 MR. HARTH: I'm going to object to that</p> <p>11 question as being leading.</p> <p>12 May I have a standing objection to leading</p> <p>13 questions in light of your position?</p> <p>14 MR. VEZEAU: As far as I'm concerned, you</p> <p>15 can. I don't think it's proper, but you do what you want.</p> <p>16 Would you please read the question back?</p> <p>17 THE WITNESS: I'm sorry, read the question</p> <p>18 again.</p> <p>19 (The reporter read the last question as</p> <p>20 follows:</p> <p>21 "QUESTION: Did he ask you or did anyone else</p> <p>22 from Mor-foe-fus -- Mor --</p> <p>23 THE WITNESS: MorphoSys.</p> <p>24 THE REPORTER: -- "MorphoSys or Cambridge,</p> <p>25 Cambridge Antibody Technology in connection with the</p> <p style="text-align: center;">115</p>
<p>1 follows:</p> <p>2 "QUESTION: Had you informed Dr. Virnekas</p> <p>3 that, at least to your way of understanding, the discussions</p> <p>4 at the Banbury Conference were confidential?")</p> <p>5 BY MR. VEZEAU:</p> <p>6 A. I don't remember saying that specifically to Dr.</p> <p>7 Virnekas. I do remember saying that on several occasions,</p> <p>8 but I don't remember specifically saying it to Dr. Virnekas.</p> <p>9 Q. And what was the basis for your belief that the</p> <p>10 discussions were confidential?</p> <p>11 A. The materials that Banbury sends out to the</p> <p>12 participants have language to that effect. I don't know if</p> <p>13 I have a copy of that -- of those guidelines. I know it's</p> <p>14 not in this folder, but it could be in another Banbury</p> <p>15 Conference folder of one of the other Banbury Conferences</p> <p>16 that I've attended.</p> <p>17 But it seemed -- I recall being impressed on the</p> <p>18 participants that these were confidential and that all, any</p> <p>19 material, anything cited from it would have to be cited as</p> <p>20 personal communication, not as a publication or as a talk or</p> <p>21 anything like that, as a formal talk.</p> <p>22 Q. Now, on page 2 of Defendant's Deposition Exhibit</p> <p>23 314, you'll note in the first full paragraph, starting "Of</p> <p>24 course," that Dr. Virnekas identifies himself as the</p> <p>25 internal MorphoSys patent attorney. Do you see that?</p> <p style="text-align: center;">114</p>	<p>1 litigation" -- no. Let me start over.</p> <p>2 MR. VEZEAU: Please.</p> <p>3 THE REPORTER: I'm sorry.</p> <p>4 MR. VEZEAU: No, that's okay.</p> <p>5 THE REPORTER: "Did he ask you or did anyone</p> <p>6 else from MorphoSys ask you to assist in connection with the</p> <p>7 litigation against Cambridge Antibody Technology?")</p> <p>8 BY MR. HARTH:</p> <p>9 A. I have -- I believe so. I believe I was asked to</p> <p>10 help their side.</p> <p>11 Q. And you were indeed sent materials by attorneys</p> <p>12 representing MorphoSys; is that correct?</p> <p>13 A. I'm going to have to say I don't recall but maybe</p> <p>14 my files will tell -- give the answer to that question.</p> <p>15 Q. Do you recall receiving materials from Mr. Booth</p> <p>16 in 1999?</p> <p>17 A. Yes, I do.</p> <p>18 Q. And what do you recall receiving?</p> <p>19 A. I received copies of patents, patent applications.</p> <p>20 That would be 103 -- 108 and 793, I think. These are two</p> <p>21 patent applications that are at issue here. And I guess</p> <p>22 asked for comments. And we had a few exchanges by e-mail,</p> <p>23 short exchanges.</p> <p>24 Q. You were asked to make -- for comments, your</p> <p>25 comments?</p> <p style="text-align: center;">116</p>

1 A. I was asked to make comments, yes.  
 2 Q. Had you previously agreed to provide comments?  
 3 A. Before that? I don't remember. I don't remember  
 4 whether I -- whether I agreed -- I don't -- actually, I  
 5 can't remember specifically whether I agreed in advance to  
 6 provide comments on them.  
 7 Q. Do you believe you just received a letter out of  
 8 the blue from --  
 9 A. No, no --  
 10 Q. -- Mr. Booth?  
 11 A. -- no, no, no, no.  
 12 Q. Okay. What I'm trying to find out is what  
 13 occasioned his, if you know, his sending you these documents  
 14 to review, these patents?  
 15 A. We had some -- we had some kind of communication.  
 16 I don't remember if it was e-mail, letter, phone. Some kind  
 17 of communication. And in the con -- and the net effect --  
 18 the net result of that was that they sent these documents to  
 19 me so I could look at them. That's my recollection.  
 20 Q. And you agreed to review these?  
 21 A. To look at them, yes.  
 22 Q. Why? I thought you had previously said you didn't  
 23 want to get involved?  
 24 A. Well, I guess you could say that I was  
 25 reconsidering.

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1 A. Whatever is in my computer.  
 2 Q. Do you have a file for -- that contains these  
 3 letters?  
 4 A. No. It would -- no.  
 5 Q. Okay. How would you go about finding this  
 6 correspondence?  
 7 A. Just what's on the e-mail -- the e-mail folder in  
 8 my computer.  
 9 Q. Yes. And that's what I meant by a file. I meant  
 10 an --  
 11 A. Oh.  
 12 Q. -- electronic file.  
 13 A. Yes.  
 14 Q. Excuse me.  
 15 A. I'm sorry. Yes.  
 16 Q. The correct term is folder.  
 17 A. Yes.  
 18 Q. You're absolutely right.  
 19 A. No, no --  
 20 Q. You're right.  
 21 A. Wait --  
 22 Q. What do you call that --  
 23 A. I do have --  
 24 Q. Yeah. What do you call that folder?  
 25 A. Yes.

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1 Q. Okay.  
 2 A. If -- I'm not sure the responses that I made to  
 3 requests to help that side, so I'm very fuzzy on any kind of  
 4 chronology here.  
 5 Q. Now, when -- your responses were provided in what  
 6 manner, by e-mail?  
 7 MR. HARTH: Objection, lack of foundation.  
 8 BY MR. VEZEAU:  
 9 A. I think I made some responses by e-mail. And I  
 10 might have sent things, I just don't know, actually sent a  
 11 paper. But I don't know. Actually, I cannot remember. And  
 12 I might have made responses during the meeting, the actual  
 13 meeting, with Mr. Booth in 1999.  
 14 Q. Did you bill for your time?  
 15 A. No.  
 16 Q. What became of the e-mail? Did you retain copies  
 17 of the e-mail responses?  
 18 A. I think I have those e-mails, yes.  
 19 Q. Now, we didn't see those in the folders that you  
 20 produced --  
 21 A. No, I should have --  
 22 Q. -- and we previously asked for that.  
 23 A. Yes, yes. I'm afraid that was an oversight. But  
 24 I could produce those.  
 25 Q. Okay. Do you have --

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1 Q. What is -- did you give that folder a name?  
 2 A. Well, that folder is called "trash" in my e-mail  
 3 program. But it's a folder of materials that are seen. And  
 4 if you ask it to go to trash, it's saved, but it's out of  
 5 the in and out boxes, in and out folders.  
 6 Q. All right. We are going to ask you for copies of  
 7 all correspondence. And we previously asked you for that.  
 8 And I think you've produced some written correspondence,  
 9 which we'll get to. But certainly we also requested e-mail  
 10 correspondence. So we will ask you to please retrieve that.  
 11 A. Okay.  
 12 Q. Whether it was you sending copies to MorphoSys or  
 13 its representatives or their sending copies -- e-mails to  
 14 you.  
 15 A. All right.  
 16 Q. Do you understand that request?  
 17 A. Yes.  
 18 Q. Thank you.  
 19 We'll make the same request, of course, of  
 20 MorphoSys, which I thought we already did.  
 21 Where did you meet with Mr. Booth in 1999?  
 22 A. We met here in Columbia at a coffee shop, a cafe,  
 23 and then at a restaurant.  
 24 Q. How long was your meeting?  
 25 A. Well, I won't be able to be exact about it, but

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1 probably of the order of three hours.  
 2 Q. And during the course of that meeting, did you  
 3 review documents?  
 4 A. At least short documents, I think. But I'm afraid  
 5 I'm a little fuzzy on what -- I'm fuzzy on exactly what we  
 6 looked over during that meeting.  
 7 Q. Who was present at that meeting?  
 8 A. Mr. Booth and another attorney from his firm, and  
 9 I can't remember his name. He'll refresh my memory. Not  
 10 one of the -- not anyone that's here.  
 11 Q. Do you recall the topics that were discussed  
 12 during that meeting?  
 13 A. Well, the general topic was the challenge to the  
 14 CAT patents. I think most of the conversation concerned the  
 15 McCafferty patent, which I guess is the 108, the one  
 16 numbered 108.  
 17 And I think the idea -- I hope I'm right about  
 18 this, but my recollection is that the idea was -- the  
 19 question was whether I would help that side; which I said --  
 20 as, you know, as their witness. And I said no.  
 21 Q. Did you also --  
 22 A. I ultimately said no.  
 23 Q. Did you also discuss the Griffiths patent, 793?  
 24 A. 793. We -- I'm -- I think we did, but I'm not  
 25 sure actually.

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1 you and ask you to please review it and tell me if you know  
 2 what it is.  
 3 A. Well, it's -- I might have seen this before, but  
 4 I'm going to have a hard time saying if I specifically  
 5 recollect what this document is.  
 6 Q. Do you believe you received this document? It  
 7 came from your files.  
 8 A. It came from my files? Well, I believe I received  
 9 this document, yes.  
 10 Q. Okay. And you believe you received it from Mr.  
 11 Harth?  
 12 A. Well, it certainly looks like I got it from Mr.  
 13 Harth.  
 14 Q. Okay.  
 15 A. I did not remember who I got the document from.  
 16 Q. Do you see a fax header on the document?  
 17 A. Yes.  
 18 Q. Do you believe you received it on or about the  
 19 date of the fax header, which is November --  
 20 A. Yes --  
 21 Q. 24 --  
 22 A. -- that makes sense.  
 23 Q. -- 1999?  
 24 A. Yes.  
 25 Q. Okay. And do you understand that the document

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1 Q. Was that at the same meeting or a different  
 2 meeting?  
 3 A. We only had one.  
 4 Q. Did you meet Mr. Harth before this week?  
 5 A. I don't think so.  
 6 Q. Have you corresponded with Mr. Harth or has he  
 7 corresponded with you?  
 8 A. Not that I can recall.  
 9 (Mr. VEZEAU and Ms. Choi conferring out of  
 10 the hearing of the reporter.)  
 11 MR. VEZEAU: Let's check and see -- maybe we  
 12 can go off the record for a second. Jane --  
 13 (Off the record.)  
 14  
 15 MR. VEZEAU: Let's go back on.  
 16 MR. HARMON: Back on record.  
 17 MR. VEZEAU: I'll ask the reporter to mark  
 18 for identification as Defendant's Deposition Exhibit 315 a  
 19 document -- documents produced from your files yesterday,  
 20 Dr. Smith.  
 21 (DEFENDANT'S DEPOSITION EXHIBIT NO. 315 WAS  
 22 MARKED FOR IDENTIFICATION BY MR. VEZEAU.)  
 23  
 24 BY MR. VEZEAU:  
 25 Q. I'll hand Defendant's Deposition Exhibit 315 to

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1 attached to the fax transmittal sheet is an opposition by  
 2 MorphoSys in the European patent office?  
 3 A. Yes, the European opposition. But, see, I'd have  
 4 to -- the reason I'm hesitating about what it is, is I'm not  
 5 even sure which patent it is that they are opposing here.  
 6 Q. Do you see --  
 7 A. I mean, I'd have to read through it to find -- to  
 8 figure that out.  
 9 Q. I'll direct your attention to the third page of  
 10 the Exhibit M16441.  
 11 A. Okay.  
 12 Q. And do you see the European patent identified at  
 13 the top, entitled "Methods for producing functional, single-  
 14 chain Fv antibody fragments on the surface of bacteriophage  
 15 particles"?  
 16 A. Is that 441? Oh, I'm sorry. Yes, here it is.  
 17 Yes. Right. Okay, shoot. Yes, I've got it.  
 18 Q. So does that ring a bell?  
 19 A. My -- yes. My guess is this is the McCafferty  
 20 patent -- this is an opposition to the McCafferty patent.  
 21 Q. Do you know what occasioned this document being  
 22 sent to you by Mr. Harth?  
 23 A. I think that in preparation for our meeting, I  
 24 believe that I requested some information about what the  
 25 patent issues were.

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1 Q. Had you spoken to Mr. Harth?  
 2 A. I do not recall speaking to Mr. Harth.  
 3 Q. Do you recall to whom you spoke?  
 4 A. It would have almost certainly have been Mr.  
 5 Booth.  
 6 Q. All right.  
 7 I'll ask the reporter to marked for identification  
 8 as Defendant's Deposition Exhibit 316 another document from  
 9 your files that you produced yesterday.  
 10 (DEFENDANT'S DEPOSITION EXHIBIT NO. 316 WAS  
 11 MARKED FOR IDENTIFICATION BY MR. VEZEAU.)  
 12 \_\_\_\_\_  
 13 BY MR. VEZEAU:  
 14 Q. I'll hand that to you and ask you if you can tell  
 15 me what that is?  
 16 A. Okay, so this is, Mr. Booth arranged for this  
 17 patent to be sent to me. And I guess this patent was cited  
 18 probably in the other document. So this is a patent from  
 19 Dower, et al.  
 20 And it -- I think I glanced through this one, so  
 21 I'm not -- I'm not very -- I'm not entirely sure of what is  
 22 covered by the patent. But it's in general a display of  
 23 proteins on filamentous phage.  
 24 Q. And starting partway -- in the back of the Dower  
 25 patent, attached to the Dower patent is a copy of an

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1 official action from the United States Patent and Trademark  
 2 Office. Do you see that?  
 3 A. Okay. So would this be the very last page --  
 4 Q. No, no.  
 5 A. -- or the last few pages?  
 6 Q. The last few pages.  
 7 A. Okay.  
 8 Q. Let me see if I can find that for you.  
 9 A. Okay.  
 10 Q. The page I showed you is entitled "Examiner's  
 11 Action" at the bottom.  
 12 A. Uh-huh.  
 13 Q. And it's that page and the following pages of the  
 14 exhibit. Do you know why that document was sent to you?  
 15 A. I might have known at the time, but I can't recall  
 16 now.  
 17 Q. And the time is, that you're referring to, either  
 18 the date of this --  
 19 A. Well --  
 20 Q. -- transmittal or shortly thereafter?  
 21 A. The -- yes, that would be -- I might have realized  
 22 at the time why that was included in the documentation. And  
 23 the time would be November of 1999.  
 24 Q. Were you asked to review that official action,  
 25 examiner's action?

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1 A. I can't remember whether I was asked to review it  
 2 or not.  
 3 Q. Okay. Dr. Smith, I'm asking this question on  
 4 purpose, but I don't want to you take offense. Sometimes  
 5 people's memories dim with time. I want to know if there's  
 6 any condition you're aware of, any medical condition, that  
 7 affects your memory?  
 8 A. No.  
 9 Q. Okay. Are you taking any medication that may  
 10 affect your memory?  
 11 A. No.  
 12 Q. All right. Do you believe your memory was -- no,  
 13 let me -- I'll withdraw that part.  
 14 Do you believe your meeting with Paul Booth was  
 15 subsequent to November 24, 1999?  
 16 A. Yes, I believe it was.  
 17 Q. Okay. Do you know whether it was in 1999 or  
 18 2000 --  
 19 A. No --  
 20 Q. -- or 2001?  
 21 A. -- it was 1999. I'm pretty sure -- I think it was  
 22 November 29 of '99. But it was the very, very end of  
 23 1999 -- of November, I mean.  
 24 Q. What occurred, if anything, subsequent to that  
 25 meeting in connection with any assistance by you to

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1 MorphoSys?  
 2 A. At some point, and it was probably after that  
 3 meeting, I communicated that I'd declined to be, you know, a  
 4 witness for MorphoSys's side.  
 5 Q. Did you do that in writing?  
 6 A. Not that I know of. It probably would have been  
 7 by e-mail. And I probably could find that e-mail.  
 8 Q. Okay. Again, we'll ask you to --  
 9 A. Yes.  
 10 Q. -- search for all --  
 11 A. It was an oversight on my part --  
 12 Q. I understand.  
 13 A. -- not to find those e-mails.  
 14 Q. Now, subsequent to declining to serve as an expert  
 15 witness, did you have any further conversations with  
 16 MorphoSys or any representative of MorphoSys in connection  
 17 with the McCafferty patent or the Griffiths patent?  
 18 A. The -- it -- there might have been something, you  
 19 know, an e-mail or two, right around that time, you know, at  
 20 the very end of 1999. But I don't recall any other  
 21 communications until this deposition came up. So that would  
 22 be just a month ago or so.  
 23 Q. When did you -- when and how did you learn that  
 24 MorphoSys wished to take your deposition in this case?  
 25 A. Hmm, how did I learn? I believe I got a

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1 communication from Mr. Booth.  
 2 Q. What --  
 3 A. And it was probably a phone conversation or an  
 4 e-mail. I don't know. I can't remember which.  
 5 Q. If it's an e-mail, we'll all know soon, though,  
 6 right?  
 7 A. Yes. Well, definitely we'll know by -- if it's  
 8 e-mail.  
 9 Q. Okay. As best you can recall, what was the  
 10 substance of that conversation or e-mail?  
 11 A. Just alerting me that a deposition would be taken.  
 12 Q. Okay.  
 13 A. And it would be in Columbia. And trying to find a  
 14 schedule that would work both for their side and your side.  
 15 Q. Did you have any follow-up discussions or e-mail  
 16 in connection with your deposition?  
 17 A. Apart from the request for a meeting alone  
 18 yesterday, none that I can recall.  
 19 Q. None that you can recall, you're saying?  
 20 A. Yes. And I don't think there was anything except  
 21 just the mechanics of setting up the deposition.  
 22 Q. Now, who made the request to meet with you alone?  
 23 A. I believe that was Mr. Booth.  
 24 Q. Do you know when that was made?  
 25 A. That would have been -- I can't say the specific

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1 date, but it was not -- it was very recently.  
 2 Q. Did Mr. Booth explain to you why he wished to meet  
 3 with you alone?  
 4 A. No.  
 5 Q. Now, you're aware that we, on behalf of CAT,  
 6 requested to be present at any meeting --  
 7 A. Yes.  
 8 Q. -- with MorphoSys representatives?  
 9 A. Yes.  
 10 Q. And what was your response to that request?  
 11 A. My response was I would ask MorphoSys --  
 12 Q. And --  
 13 A. -- and they wanted a meeting by themselves. And  
 14 my response to that was, okay, but I was going to -- I would  
 15 extend to you the same opportunity, extend to your side, the  
 16 Cambridge Antibody Technology side, the same opportunity.  
 17 Q. And you did meet yesterday with Mr. Booth and Mr.  
 18 Harth?  
 19 A. Yes.  
 20 Q. For how long?  
 21 A. A little bit less than two hours.  
 22 Q. Okay. And that was in your offices?  
 23 A. No, it was in a conference room --  
 24 Q. Oh, that's right.  
 25 A. -- in our building.

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1 Q. Were you shown any documents during the course of  
 2 that meeting?  
 3 A. Was I shown any documents? Mostly I was -- I  
 4 showed them documents. I brought the documents that you  
 5 saw.  
 6 Q. That were produced?  
 7 A. That I was producing in response to the subpoena.  
 8 And did I -- did they produce any documents to me?  
 9 I actually can't remember any, seeing any documents that  
 10 they produced for me. Oh, yes -- no, hold it. Yes, they  
 11 did. I do remember. They did produce the -- that  
 12 introduction to the --  
 13 Q. The draft foreword --  
 14 A. Yeah.  
 15 Q. -- to the book co-edited by Dr. Kay --  
 16 A. Well --  
 17 Q. -- Dr. Winter and --  
 18 A. Well, no, I'm not sure that I saw any of the  
 19 edited --  
 20 Q. Okay.  
 21 A. -- business. But that book was brought up and the  
 22 introduction --  
 23 Q. I see.  
 24 A. -- to it.  
 25 Q. Okay. And that was the topic of your --

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1 A. I'm actually getting confused between the two  
 2 sides.  
 3 Q. Okay.  
 4 A. Because I know that your side did bring that up.  
 5 And I actually can't remember in what ways they brought it  
 6 up.  
 7 Q. Okay. But that, you believe, was a topic of your  
 8 discussion --  
 9 A. Yes --  
 10 Q. -- yesterday?  
 11 A. -- it was among the topics, yes.  
 12 Q. Okay. As best you can recall, what other topics  
 13 were discussed?  
 14 A. The topics had to do with -- the main thrust of it  
 15 had to do with whether the invention of single-chain  
 16 antibodies displayed on phage -- phage -- phage antibodies  
 17 was publicly disclosed as a result of the grant proposal  
 18 that I submitted and as a result of publicly talking about  
 19 the grant proposal.  
 20 Q. Now, you indeed attempted to get patent protection  
 21 that would cover the display of single-chain antibodies on  
 22 a living --  
 23 A. Yes.  
 24 Q. -- organism --  
 25 A. I agreed --

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1 Q. -- is that correct?  
 2 A. I agreed to be a co-inventor on that patent  
 3 application, yes.  
 4 Q. And that was with Ladner; is that correct?  
 5 A. Well, was with the company -- it was ultimately  
 6 with Enzon, which was the company that took over the patents  
 7 from Genex Corporation, who filed the original patent  
 8 application.  
 9 And the first inventor on that application was  
 10 Ladner. But at the time when I ever had any contact with  
 11 Genex, Ladner had left the company. So I never had talked  
 12 about this with Ladner himself, even though I know him,  
 13 about that -- about this patent.  
 14 Q. Why were you interested, if you were interested,  
 15 in being a co-inventor?  
 16 A. Well, I'm not quite sure about my -- about why I  
 17 did it. But certainly I had cooperated with them at the  
 18 beginning trying to set up this collaboration where my lab  
 19 would be doing phage display of single chain antibodies.  
 20 And when they brought up the idea of my coming in to help  
 21 their patent, I agreed to it. And I guess, are you asking  
 22 what my motivation is or what I thought was in it for us?  
 23 Q. Yes.  
 24 A. I certainly thought this potentially could be a  
 25 viable patent that would make money for the university and

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1 for my laboratory. So I thought there was a chance that  
 2 this would be -- I'm putting my mind back in those days, but  
 3 I thought there was a chance that this could be something  
 4 valuable.  
 5 Q. When did you get involved with Jorge Goldstein?  
 6 When did you start your involvement?  
 7 A. That was probably in 1991, maybe late in 1991.  
 8 I'm actually not sure. I'd have to look at the chronology  
 9 of when the -- when Enzon acquired the patent from Genex and  
 10 when the this company, Stern, et al., came to represent  
 11 Enzon in that matter. But I think it was 1991. Maybe late  
 12 1991.  
 13 Q. And in connection with that effort, do you recall  
 14 preparing a declaration that was submitted to the United  
 15 States Patent and Trademark Office?  
 16 A. I believe that I helped to prepare one.  
 17 Basically, sort of edited their version. I'm actually not  
 18 sure of this. It's a long time ago and I'm having a hard  
 19 time recalling the specific events, but I think that's what  
 20 I did.  
 21 MR. HARMON: I need to change tapes.  
 22 MR. VEZEAU: Sure. Go ahead.  
 23 (Off the record.)  
 24  
 25 MR. VEZEAU: Shall we go back on?

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1 MR. HARMON: This is tape 3. Back on record.  
 2 BY MR. VEZEAU:  
 3 Q. I had directed your attention to exhibits --  
 4 Defendant's Deposition Exhibits 315 and 316, which was  
 5 correspondence paper or facsimile correspondence with  
 6 MorphoSys counsel. Do you know if you had any other  
 7 correspondence with MorphoSys counsel?  
 8 A. Well, we've already mentioned --  
 9 Q. Dr. Virmekas?  
 10 A. -- with Mr. Booth and we've already mentioned Dr.  
 11 Virmekas. I can't recall, but I might have. I don't know.  
 12 Not that I know -- not that I can remember now.  
 13 (DEFENDANT'S DEPOSITION EXHIBIT NO. 317 WAS  
 14 MARKED FOR IDENTIFICATION BY MR. VERZEAU.)  
 15  
 16 BY MR. VERZEAU:  
 17 Q. Okay. I'll place before you Defendant's  
 18 Deposition Exhibit 317 and ask you to please take a look at  
 19 that.  
 20 A. Okay. Okay. All right.  
 21 Q. You tell me when you're -- I have some questions  
 22 about this document --  
 23 A. Okay.  
 24 Q. -- so you tell me --  
 25 A. Could I just --

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1 Q. Yeah, you might want to take a look at it and read  
 2 it.  
 3 A. Can you tell me -- let's see.  
 4 Q. This document, by the way, Dr. Smith, is from your  
 5 file.  
 6 A. Right. Okay, I --  
 7 Q. Have you read it?  
 8 A. Yes.  
 9 Q. Now I'd like to direct your attention to the last  
 10 page of Defendant's Deposition Exhibit 317. Is that your  
 11 signature?  
 12 A. Yes.  
 13 Q. And the date that appears there, June 30, 1995, is  
 14 that the date you believe you signed this document?  
 15 A. Yes.  
 16 Q. Okay. Now, you stated right above it that "I  
 17 further state that all statements made on our own knowledge  
 18 are true and that all statements made on information and  
 19 belief are believed to be true and further that willful  
 20 false statements and the like are punishable by fine or  
 21 imprisonment or both under Section 1001 of Title 18 of the  
 22 U.S. Code and may jeopardize the validity of the application  
 23 or any patent issuing thereon."  
 24 Did you understand that when you signed this  
 25 document?

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1 A. Yes, I think I did.  
 2 Q. And did you believe the statements you made in  
 3 this declaration by you were true?  
 4 A. Yes.  
 5 Q. Is it a fact that you would not have made these  
 6 statements if you did not believe they were true?  
 7 MR. HARTH: Objection, leading.  
 8 BY MR. VEZEAU:  
 9 A. Yes, I think it's true that I would not have made  
 10 the statements if I didn't think they were true.  
 11 Q. Now, you also identified -- let's go to page 1 of  
 12 this document, please, this declaration by you. This was  
 13 submitted, do I understand correctly, in the Ladner, et al.,  
 14 application that you were working on with the Enzon lawyers?  
 15 MR. HARTH: Objection, leading.  
 16 BY MR. VEZEAU:  
 17 A. I don't recall the context in which I made this  
 18 declaration.  
 19 Q. All right. I'll ask you to look at the heading --  
 20 A. Okay.  
 21 Q. -- in the upper left-hand portion. Do you see  
 22 Ladner, et al. --  
 23 A. Yes.  
 24 Q. -- application so-and-so? Does that help?  
 25 A. Well -- okay, the reason I'm hesitating is I'm not

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1 sure which Ladner, et al., application this is.  
 2 Q. Okay.  
 3 A. Is this the February 1987 application for the --  
 4 on displaying single-chain antibodies and other molecules on  
 5 the surface of living organisms?  
 6 Q. I just got this document from your files.  
 7 A. Yeah.  
 8 Q. I hope you understand that.  
 9 A. Yes. Okay, so I'm -- the reason I'm hesitating is  
 10 I'm not exactly sure which Ladner, et al., this is, but I  
 11 believe it was probably to do with that Ladner, the Ladner  
 12 patent, but I'm not -- I'm just not sure.  
 13 What does "filed" mean here? What does that  
 14 filing date mean?  
 15 Q. That's the filing date of the application number  
 16 set forth above. But --  
 17 A. It may not --  
 18 Q. -- it may be a continuation --  
 19 A. Yes.  
 20 Q. -- application.  
 21 A. All right. So this is -- this is plausibly that  
 22 original Ladner application on phage -- on displaying  
 23 single-chain antibodies and other binding molecules on the  
 24 surface of living things.  
 25 Q. All right.

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1 A. So the title here is changed from his original  
 2 title.  
 3 Q. Okay.  
 4 A. So I'm guessing that that's correct, yes. Okay.  
 5 Q. Regardless, the statements you believed were true  
 6 when you made them; is that correct?  
 7 A. Yes.  
 8 Q. All right. Now, in the paragraph 2 of this  
 9 declaration, Defendant's Deposition Exhibit 317, you  
 10 identify the Smith 1985 publication and the Parmley and  
 11 Smith 1988 publications that you discussed during your  
 12 questioning with Mr. Harth today. Do you see that?  
 13 A. Yes.  
 14 Q. All right. Now, do you see in paragraph 4 on the  
 15 next page of this exhibit where it was your opinion that the  
 16 'Parmley and Smith' and 'Smith' publications in combination  
 17 with the HUES-tun -- HUS-tun patent --  
 18 A. It's HUES-tun.  
 19 Q. Huston. -- "would neither have taught nor  
 20 suggested the claimed invention to one of skill in the art"  
 21 for the reasons you subsequently set forth?  
 22 A. Yes.  
 23 Q. Now, at the end of -- I'll withdraw that partial  
 24 question.  
 25 In paragraph 8 you state: "However, the

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1 additional conformational constraint posed onto a molecule  
 2 such as an SCA that is expressed on the surface of an  
 3 organism may have been expected to interfere with its  
 4 ability to fold properly and thus, with its ability to  
 5 retain binding functionality. The SCAs of the present  
 6 invention are subject to such an additional conformational  
 7 constraint not only because they are larger molecules than  
 8 the antigens in the prior art, but also because they are on  
 9 the surface of a phage, and not in solution."  
 10 Do you see that?  
 11 A. Yes.  
 12 Q. What did you mean by "conformational constraint"?  
 13 A. The expressing a protein on the surface, on the  
 14 complex surface of an organism and this organism is being  
 15 used to cover filament -- things like phages or viruses as  
 16 well as cells that can grow autonomously like bacteria or  
 17 mammalian cells. Anyway, it was saying that being -- lying  
 18 on the surface, on the complex surface of an organism, would  
 19 provide opportunities for interactions that might interfere  
 20 with the ability of the protein to fold autonomously the way  
 21 it would if it were completely free of associations with  
 22 other molecules in solution.  
 23 Q. Now, the SCAs referred to in this paragraph 8 and  
 24 elsewhere in this declaration, do I understand those are the  
 25 single-chain antibodies you discussed in --

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1 A. Yes, single-chain antibodies.  
 2 Q. Okay. Now, on paragraph 9, you refer to the SCAs  
 3 of the present invention as consisting of "around 240 amino  
 4 acids which are encoded with approximately 800 base pairs."  
 5 Do you see that?  
 6 A. Uh-huh. Yes.  
 7 Q. And you -- you state that "In 'Parmley and Smith'  
 8 and 'Smith,' we recognized" --  
 9 The we, do I assume it is you and/or you and  
 10 Parmley?  
 11 A. Yes.  
 12 Q. -- "recognized that the length of a molecule or  
 13 fragments thereof and the length of the gene encoding the  
 14 molecule or fragments thereof is a factor that might  
 15 obstruct its successful expression on the surface of a  
 16 filamentous phage."  
 17 And then you go on -- you have a colon there and  
 18 you go on to quote from both Smith and Parmley. Do you see  
 19 that?  
 20 A. Yes.  
 21 Q. Did you at any time, in connection with your work  
 22 on this application, identify your grant proposals submitted  
 23 to the NIH?  
 24 MR. HARTH: I'm going to object to that  
 25 question as being vague. Identified to whom?

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1 not insisting. I'm just asking you if you will answer it.  
 2 If you will not, that's fine. Because I don't want you to  
 3 be uncomfortable here, in view of David Harth's comments.  
 4 THE WITNESS: Can you repeat the question?  
 5 (The reporter read the question as  
 6 follows:  
 7 "QUESTION: Did you at any time, in  
 8 connection with your work on this application, identify your  
 9 grant proposals submitted to the NIH?")  
 10 THE WITNESS: Repeat it again. I'm sorry.  
 11 I need to hear the first part of the question again.  
 12 (The reporter re-read the question.)  
 13 BY MR. VEZEAU:  
 14 A. So this is in connection with this grant propo --  
 15 this grant application?  
 16 Q. This is not a grant -- this is a patent  
 17 application.  
 18 A. Sorry. Sorry. Patent application.  
 19 Q. Yes.  
 20 A. In connection with this patent application --  
 21 Q. Yes.  
 22 A. -- did I identify my -- the role of an NIH grant?  
 23 I can't remember.  
 24 Q. Okay. That's fair.  
 25 In paragraph 11 of Exhibit 317 you state, "In

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1 MR. VEZEAU: To anyone.  
 2 MR. HARTH: Well, if that's the question, the  
 3 witness should be advised that the question will encompass  
 4 communications with your attorneys, and I would advise you  
 5 to contact Mr. Hoskins before you would answer that  
 6 question.  
 7 MR. VEZEAU: Are you being advised by  
 8 MorphoSys counsel now?  
 9 MR. HARTH: He can take or leave the advice.  
 10 But Mr. Hoskins, before he left, made his statement. You  
 11 have -- clearly are asking him to communicate or testify to  
 12 communications with his attorneys and in that he is not  
 13 currently being represented here, I feel it's perfectly  
 14 appropriate to warn the witness of what you're up to and to  
 15 advise him to call his counsel. He can do it or not. It's  
 16 up to him.  
 17 BY MR. VEZEAU:  
 18 Q. Are you going to answer the question or not?  
 19 THE WITNESS: Well, can you -- could you  
 20 repeat the question, please?  
 21 THE REPORTER: (Nodding head.)  
 22 BY MR. VEZEAU:  
 23 Q. Before you do that, Dr. Smith, I'm not here to try  
 24 to pry this type of -- if you're at all uncomfortable with  
 25 the question and don't want to answer it, that's fine. I'm

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1 'Parmley and Smith' we recommended on page 315, left column,  
 2 'using fragments of 100 to 300' --  
 3 Is that base pairs?  
 4 A. Yes.  
 5 Q. -- "as inserts, because we expected a construct  
 6 larger (sic) than that to be unstable." Do you see that?  
 7 A. Yes.  
 8 Q. All right. "Additionally, we had observed an  
 9 extensive breakdown of molecules encoded by more than 300  
 10 base pairs and a reduction in phage assembly and infectivity  
 11 as a result thereof."  
 12 What was the extensive breakdown of molecules you  
 13 refer to?  
 14 A. Well, it's possible to, and Steve Parmley did, in  
 15 connection with that 1988 paper, examine the state of the  
 16 gene III protein in the various phage displaying different  
 17 domains.  
 18 And what he observed was that in the clone that  
 19 was displaying the longest of the fragments that he studied,  
 20 which was about -- a little bit more than a hundred amino  
 21 acids, the gene III protein, the intact gene III protein was  
 22 a very minor component. There was a component that  
 23 consisted of the protein minus the foreign domain. And then  
 24 there was also a strong component that was just about half  
 25 of the gene III protein.

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1 So that would be -- that would imply that this  
2 foreign domain that had caused the protein to be degraded,  
3 not just the foreign domain itself, but also the part of the  
4 protein that lies adjacent to the foreign domain. That was  
5 the observation. And that was what that's referring to.

6 And then it goes on to say that the phage were  
7 less infective and they were produced in less yield.

8 Q. You, also in paragraph 12, say, "Another obstacle  
9 to the success of the present invention was the possibility  
10 of the recombinant pIII-SCA molecule would be degraded  
11 during its transversion of the periplasmic space of the  
12 phage-producing cell."

13 What did you mean by the recombinant pIII-SCA  
14 molecule?

15 A. pIII or gene 3 protein, because they're synonyms,  
16 is the protein to which the foreign domain was fused and  
17 is constructs. The foreign domain in this case is the  
18 single-chain antibody.

19 So the pIII-SCA fusion, that protein is the --  
20 this modified coat protein. And in filamentous phage  
21 assembly, that coat protein starts by being secreted through  
22 the membrane so that most of it lies in the periplasmic  
23 space.

24 And the periplasmic space was known to have potent  
25 proteases or protein degrading enzymes. So it was a strong

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1 possibility -- it seemed a strong possibility at the time  
2 that the pIII single-chain antibody molecule would be  
3 subject to strong degradation forces.

4 Q. In paragraph 13 you state, "The conformational  
5 constraint posed on an SCA expressed not in solution but on  
6 the surface of a filamentous phage, the expected instability  
7 of an insert of the length of a SCA and the observed  
8 degradation of the products of such inserts, as well as the  
9 possibility of periplasmic degradation, rendered the success  
10 to express a functional SCA on the surface of a filamentous  
11 phage quite unpredictable at the time of filing. No  
12 reasonable expectation of success was available from my work  
13 on antigen fusions in 'Smith' and 'Parmley and Smith.'"

14 A. Okay. Could we say what the "time of filing," you  
15 know -- would you guess what -- would you be able to help me  
16 by helping me to interpret what "time of filing" means in  
17 that context --

18 Q. Dr. Smith --

19 A. -- would you know?

20 Q. -- no, I can't.

21 A. I know I'm supposed to know.

22 Q. -- these are your words.

23 A. I know, I know.

24 Q. In fact, I was going to ask you that precise  
25 question. Do you know what you meant in 1995 when you

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1 signed this declaration and said it was true by at the time  
2 of filing?

3 MR. HARTH: Well, I'm going -- I'm going to  
4 interpose an objection here. Dr. Smith was kind enough to  
5 give both sides --

6 MR. VEZEAU: David, not a speech. Just an  
7 objection, please. That's --

8 MR. HARTH: Dr. Smith --

9 Please don't interrupt me.

10 MR. VEZEAU: This is speech.

11 MR. HARTH: You can make any comment you care  
12 to make after I'm done. But please don't interrupt me.

13 MR. VEZEAU: All right. I object to this  
14 type of speechmaking as intruding on the limited time we  
15 have for cross. I really do. Make your objection. You  
16 have no right to do anything more now.

17 MR. HARTH: Dr. Smith was kind enough to  
18 furnish both sides with copies of his files. It is apparent  
19 that he has not looked at these documents in some time.

20 He has asked you what I consider to be a  
21 reasonable question. You shot back, "Well, they're your  
22 words." But there are a number of other documents that he  
23 produced that would provide him with answers to his  
24 question. And I object to your proceeding without giving  
25 him a chance to look at those documents.

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1 MR. VEZEAU: That's absolutely absurd. And  
2 this is a speech. This is an attempt to interfere with  
3 examination. And I'm going to ask the court for appropriate  
4 sanctions in view of this speech. That's not an objection.  
5 That's a speech. And you know -- you should know better,  
6 David.

7 MR. HARTH: In the meantime, I do not believe  
8 there is a question pending.

9 MR. VEZEAU: There was until you interrupted.

10 MR. HARTH: Mr. Vezeau, you just read, in a  
11 dramatic fashion, the paragraph. But there was not a  
12 question.

13 MR. VEZEAU: Then you didn't listen, sir,  
14 because I asked the witness if he recalled what he meant by  
15 "at the time of filing."

16 BY MR. VEZEAU:

17 A. So is that the question?

18 Q. Yes.

19 A. I do not recall now what "the time of filing"  
20 meant in that context.

21 Q. And you --

22 A. I'm afraid I don't.

23 Q. I understand. You also state in the same  
24 paragraph: "No reasonable expectation of success was  
25 available from my work on antigen fusions in 'Smith' and

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<p>1 'Parmley and Smith.'" Do you see that?</p> <p>2 A. Yes.</p> <p>3 Q. What was the basis for that statement?</p> <p>4 A. The basis was what went before, which were the</p> <p>5 reservations that we expressed -- well, especially that</p> <p>6 Steve Parmley and I expressed in the 1988 paper about the</p> <p>7 possibility of expressing large domains on gene III protein.</p> <p>8 So it was -- wasn't clear at the time that you</p> <p>9 would have success with a complex and relatively large</p> <p>10 domain like a single-chain antibody. That was the burden of</p> <p>11 that statement.</p> <p>12 MR. VEZEAU: I'll ask the reporter to mark</p> <p>13 for identification as Defendant's Deposition Exhibit 318, a</p> <p>14 document entitled "Amendment and Response."</p> <p>15 (DEFENDANT'S DEPOSITION EXHIBIT NO. 318 WAS</p> <p>16 MARKED FOR IDENTIFICATION BY MR. VEZEAU.)</p> <p>17</p> <p>18 BY MR. VEZEAU:</p> <p>19 Q. Dr. Smith, I'll hand this to you and ask you to</p> <p>20 please take a look at it and tell me if you recognize that</p> <p>21 document. Again, this came from your files that you</p> <p>22 produced yesterday.</p> <p>23 MR. HARTH: 318?</p> <p>24 MR. VEZEAU: Yes.</p> <p>25 BY MR. VEZEAU:</p> <p style="text-align: center;">149</p>	<p>1 -- were not interested in this response?</p> <p>2 MR. HARTH: Objection, leading,</p> <p>3 argumentative, misstates his testimony.</p> <p>4 BY MR. VEZEAU:</p> <p>5 Q. Do you know whether you reviewed this amendment</p> <p>6 and this response?</p> <p>7 A. I don't recall --</p> <p>8 Q. Okay.</p> <p>9 A. -- so I can't tell -- answer your question.</p> <p>10 Q. Did you work with Jorge Goldstein in connection</p> <p>11 with preparing this response?</p> <p>12 A. To some extent, yes. As you saw, there were</p> <p>13 correspondence --</p> <p>14 Q. Okay.</p> <p>15 A. -- between us. But I would say that I did not</p> <p>16 work very hard on this patent matter.</p> <p>17 Q. Let me ask you this. Do you recall objecting to</p> <p>18 any comment in this amendment or response?</p> <p>19 A. I don't recall objecting, no.</p> <p>20 Q. Okay.</p> <p>21 MR. VEZEAU: Let's take just about a three-</p> <p>22 or four-minute break. It's a little warm in here. Catch</p> <p>23 your breath and we'll continue.</p> <p>24 THE WITNESS: Okay.</p> <p>25 (Recess.)</p> <p style="text-align: center;">151</p>
<p>1 A. Okay, I see the document.</p> <p>2 Q. Okay. Now, your declaration is referred to in</p> <p>3 this document at page 4, at the bottom, the last full</p> <p>4 paragraph or the last paragraph, "Applicants respectfully</p> <p>5 direct..." Do you see that?</p> <p>6 A. Yes.</p> <p>7 Q. Did you participate in the preparation of this</p> <p>8 amendment and response or did you comment upon this</p> <p>9 amendment and response?</p> <p>10 A. I don't remember doing so.</p> <p>11 Q. Okay. Do you know why this document was in your</p> <p>12 files, this exhibit -- this amendment and response,</p> <p>13 Defendant's Deposition Exhibit 318?</p> <p>14 A. Well, I intended to file, though not terrifically</p> <p>15 systematically, the correspondence having to do with this</p> <p>16 matter in that -- well, it was in another folder, not the</p> <p>17 one that I gave you because ultimately I gathered all of</p> <p>18 them into one folder. I just filed it all into one folder.</p> <p>19 But I put the correspondence into a folder, and it</p> <p>20 wasn't unusual for me to not even glance at it. So I may</p> <p>21 well never have read this, this response.</p> <p>22 Q. Well, you were a co-inventor at that time of the</p> <p>23 application; is that right?</p> <p>24 A. Yes.</p> <p>25 Q. All right. And are you saying that you wouldn't</p> <p style="text-align: center;">150</p>	<p>1</p> <p>2 MR. HARMON: Back on record.</p> <p>3 BY MR. VEZEAU:</p> <p>4 Q. Dr. Smith, do you have any way of knowing whether</p> <p>5 in fact the notebooks you discussed that -- for which you</p> <p>6 filed a request to the post office to look, indeed, actually</p> <p>7 made it to Mr. Goldstein's office?</p> <p>8 A. Sorry, could you ask the question again?</p> <p>9 Q. Yeah, was that a little too convoluted?</p> <p>10 A. Yeah, it was.</p> <p>11 Q. I'll try again. Yeah. I was a little puzzled</p> <p>12 with the exhibit that was marked -- what was the last</p> <p>13 one? -- yeah, Exhibit, Smith Exhibit 21. Do you see that?</p> <p>14 A. Uh-huh. Yeah.</p> <p>15 Q. If you look at the top where the post office</p> <p>16 apparently checked, do you see that? It says, "We did not</p> <p>17 locate the article and the addressee failed to reply to our</p> <p>18 inquiry" -- et cetera.</p> <p>19 A. Okay. Yes.</p> <p>20 Q. Do you know if there was ever any follow-up?</p> <p>21 A. Yes. I'm pretty sure we followed up on this</p> <p>22 pretty vigorously, actually, making phone calls. And this</p> <p>23 might have been the first response we got back. And we</p> <p>24 followed up and insisted that they try to get ahold of the</p> <p>25 addressee. And I either called him or he called us.</p> <p style="text-align: center;">152</p>

1 I actually talked to Mr. Goldstein himself at some  
2 point in the context of these missing lab books. And so he  
3 described how their mail system had worked and why he was  
4 convinced that it never got to their firm.

5 Q. Why did you send your lab books to that firm?

6 A. Upon their request.

7 Q. Now, you also discussed that there was a delay in  
8 concluding an agreement with Genex, between the University  
9 of Missouri and Genex. And part of the reasons were, I  
10 think you mentioned, patent concerns. Can you tell me what  
11 you meant by that?

12 A. I can't recall at this time exactly what the  
13 issues were. I just know that we had a hard time coming to  
14 an agreement. So I'd mentioned patents as just commercial  
15 protection. It's not that I remember specifically talking  
16 about patents. I really can't remember this far -- this  
17 long afterwards what we talked about; you know, what the  
18 issues were.

19 And I'm not -- I don't know if I have any  
20 correspondence on that issue. Maybe there is. I believe  
21 Mr. Hoskins would have found anything from the university's  
22 office that was run by Connie Armentrout at the time that  
23 would have to do with that. So I think he probably produced  
24 anything they had, but it's doubtful that there is anything.

25 Q. Do you know what, if any, restrictions were

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1 imposed on you or the University of Missouri as a result of  
2 the collaboration with Genex in connection with the --

3 A. I can't remember --

4 Q. -- a single-chain antibody --

5 A. I certainly can't remember it now.

6 Q. Do you recall that there were restrictions?

7 A. I can't even recall that.

8 Q. Now, have you ever -- I'll withdraw that.

9 (Mr. Vezeau and Ms. Choi conferring out of  
10 the hearing of the reporter.)

11 Q. I'd like to direct your attention to what you  
12 called the pink sheets or the summary sheet that is marked  
13 as Smith Exhibit 8.

14 A. Okay.

15 Q. I'm sorry, Smith Exhibit 6.

16 A. It should be at the bottom of this pile; I don't  
17 quite -- remember setting it there. I'm sorry, I need to go  
18 through my -- here it is. It just got clipped together with  
19 another document. Okay.

20 Q. Thank you. This summary statement you received  
21 from the NIH; is that correct?

22 A. Yes.

23 Q. And do you know who prepared the critique at  
24 page 2?

25 A. Yes, I believe so. This is not someone that was

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1 responsible for the criticism itself, but it would have been  
2 Gene Zimmerman, the executive secretary.

3 Q. Okay. And do you -- do you know --

4 A. So he's actually not allowed to have any part in  
5 the judgment or anything like that? He summarizing -- I'm  
6 very familiar with this process since I've been on study  
7 sections myself. The members of the study section submit  
8 their comments to the secretary, and the secretary creates  
9 the critique out of those comments.

10 Q. Do you know any of the individuals that were part  
11 of the reviewing group?

12 A. Mark Davis, Philip Tucker, Marty Weigert, and --  
13 well, that's it that are on the study section.

14 Q. Do you know what criteria, if any, are used for  
15 selecting individuals to be part of a study section?

16 A. Well, at NIH a study section or review group is  
17 formed around a topic that -- or an area, a field of  
18 research. In this case, it's allergy and immunology study  
19 section. There's actually quite a few study sections in the  
20 whole structure of the review branch that deal with  
21 immunology, but this would be immunology with a slant  
22 towards allergy.

23 And the people in that area are selected by,  
24 mostly by the secretary who reads the literature and makes a  
25 judgment of people that might be good contributors to those

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1 study sections and then gets them to agree to be on a study  
2 section for a term of, I think it's three years. I've  
3 actually never been on a standing study section. I've been  
4 on many ad hoc ones.

5 Q. Now, the critique that's set forth at page 2 of  
6 Smith Exhibit 6, to your understanding, to what extent, if  
7 at all, is that a consensus view of the study section?

8 A. In the study section there's -- one member of the  
9 study section is designated as a primary viewer. And  
10 depending on the particular study section, one or two are  
11 designated as secondary reviewers. Each of those writes the  
12 comments for the particular -- for that particular proposal.

13 And the comments on the -- in the -- the summary  
14 statement, the critique in the summary statement would be  
15 very influenced by the comments of the primary and secondary  
16 reviewers. So it would be a consensus of them.

17 And they're very strictly asked to reflect what  
18 the consensus of those reviewers is. Now, they're supposed  
19 to take into account the views of other members of the study  
20 section as well because every proposal is also discussed in  
21 the meeting with the primary viewers and the secondary  
22 reviewers presenting them in open discussion. Though that's  
23 usually pretty brief. I mean, I would, of course, have no  
24 idea in the case of this particular one.

25 Q. Now, I note in this critique, about the middle --

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<p>1 A. Of the second page?</p> <p>2 Q. Yes, page 2. -- in the discussion of -- is it</p> <p>3 proteolysis --</p> <p>4 A. Uh-huh.</p> <p>5 Q. -- of fusion proteins?</p> <p>6 A. Uh-huh.</p> <p>7 Q. The statement, the following statement is made:</p> <p>8 "This may be a problem for very large inserts, such as the</p> <p>9 SCAB" --</p> <p>10 Is that the single-chain antibody --</p> <p>11 A. Yes.</p> <p>12 Q. -- you've testified about?</p> <p>13 A. Uh-huh.</p> <p>14 Q. -- "moreover, the inserted SCAB moiety may</p> <p>15 interfere with viral growth. The applicant does discuss</p> <p>16 many of the eventualities here but the prospect for success</p> <p>17 is lower. In any case, the SCAB project is a minor part of</p> <p>18 the proposal."</p> <p>19 Did you provide that information that is this last</p> <p>20 sentence, "In any case, the SCAB project is a minor part of</p> <p>21 the proposal," or is that a view that the study committee</p> <p>22 came up with?</p> <p>23 A. I think that's more a view of what the study</p> <p>24 section interpreted it at.</p> <p>25 Q. Okay.</p> <p style="text-align: center;">157</p>	<p>1 Q. I'm going to place before you a document</p> <p>2 previously identified as CAT 30(b)(6) Exhibit 22. And first</p> <p>3 of all, I would imagine you haven't seen this document</p> <p>4 before, have you?</p> <p>5 A. No.</p> <p>6 Q. Okay. Dr. Chiswell has indicated that these are</p> <p>7 notes he prepared after going to the 1992 Banbury Conference</p> <p>8 where he gave a talk and you said you gave a talk. Do you</p> <p>9 recall meeting Dr. Chiswell?</p> <p>10 A. I'm pretty sure I met him at that time. I met him</p> <p>11 -- I think it was at that meeting that I met him --</p> <p>12 Q. Okay.</p> <p>13 A. -- yes.</p> <p>14 Q. Do you recall discussing with him your efforts to</p> <p>15 display an scFv on phage?</p> <p>16 A. I'm afraid I don't remember specifically talking</p> <p>17 about that, but my guess is that I would have.</p> <p>18 Q. Okay. I'm going to direct your attention to the</p> <p>19 top of page 2 --</p> <p>20 A. Oh, I'm sorry.</p> <p>21 Q. -- of this exhibit --</p> <p>22 A. Yes. Okay. Right.</p> <p>23 Q. -- and just ask you to read the first three</p> <p>24 sentences on that page -- or the first two sentences.</p> <p>25 A. "George Smith privately is candid that he had</p> <p style="text-align: center;">159</p>
<p>1 A. It was a small number of words in the proposal,</p> <p>2 but a fairly large amount of enthusiasm. So they probably --</p> <p>3 but it was still -- I think their interpretation was that</p> <p>4 this is a fairly minor part of the project.</p> <p>5 Q. Now, do you recall providing --</p> <p>6 (Mr. Vezeau and Ms. Choi conferring out of</p> <p>7 the hearing of the reporter.)</p> <p>8 Q. As of April of 1990 -- let me.</p> <p>9 Directing your attention to Smith Exhibit 9 --</p> <p>10 A. Yes.</p> <p>11 Q. -- where you indicate that the plasma was received</p> <p>12 in May, May 21 of 1990, do you see that?</p> <p>13 A. Yes.</p> <p>14 Q. Okay. As of April of 1990, what work, if any, had</p> <p>15 been performed in connection with construction of a library</p> <p>16 of infectious antibodies?</p> <p>17 A. None. I didn't start till I had their antibody,</p> <p>18 referring to physical work. Thinking about it and writing</p> <p>19 constructs on paper had progressed.</p> <p>20 Q. And the work, again, that was performed in your</p> <p>21 lab was documented in the six laboratory notebooks that no</p> <p>22 longer can be located --</p> <p>23 A. Yes.</p> <p>24 Q. -- is that correct?</p> <p>25 A. That's correct.</p> <p style="text-align: center;">158</p>	<p>1 tried and failed to put an scFv from Genex into gene III in</p> <p>2 '88-'89."</p> <p>3 Well, I hope I didn't say that.</p> <p>4 "Genex were clearly not over" -- oh, I see. I</p> <p>5 see. He's saying that I tried but didn't get the gene.</p> <p>6 Okay. "Genex were clearly not over helpful. Might prove</p> <p>7 useful to show that early publications were not enabling for</p> <p>8 antibodies."</p> <p>9 Q. Do you remember any such discussion with Dr.</p> <p>10 Chiswell?</p> <p>11 A. I'm a little surprised at this. I mean, I think</p> <p>12 he's pulling out of the conversation probably a minor part</p> <p>13 of it. But I may well have said, and I certainly thought at</p> <p>14 the time, Genex was certainly -- had certainly delayed a lot</p> <p>15 in giving us the gene.</p> <p>16 I would have thought that I would have -- I</p> <p>17 believe that the sentence is bringing together two, or</p> <p>18 confusing two things. So the first part of it, "tried and</p> <p>19 failed to put an scFv from Genex into gene III," that's the</p> <p>20 sort of thing that I expect I talked to him about, saying</p> <p>21 what problems we encountered putting a single chain into</p> <p>22 gene III.</p> <p>23 And what he implies in the next sentence was that</p> <p>24 Genex was not overhelpful and that -- the '88-'89 date would</p> <p>25 refer to the era where Genex wasn't very helpful because</p> <p style="text-align: center;">160</p>

1 they didn't give us the gene.  
 2 Q. I see.  
 3 A. That's my interpretation of that sentence. I  
 4 mean, I think the sentence is just sort of garbled a little  
 5 bit from what he really meant to say.  
 6 Q. Okay. All right. Do I understand correctly you  
 7 do know Dr. Kay?  
 8 A. Yes.  
 9 Q. Brian Kay?  
 10 A. Yes.  
 11 Q. Do you consider him a credible scientist?  
 12 A. Oh, absolutely.  
 13 Q. And do you regard -- do you regard him highly in  
 14 your field?  
 15 A. Yes.  
 16 Q. If Dr. Kay testified that he attempted to get  
 17 ahold of you in connection with a draft foreword for the  
 18 book he co-edited, would you believe that he did make an  
 19 attempt?  
 20 A. And failed?  
 21 Q. Yes, apparently.  
 22 A. Yes, I think that's entirely credible.  
 23 (Mr. Vezeau and Ms. Choi conferring out of  
 24 the hearing of the reporter.)  
 25 Q. I'm going to place before you a document

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1 previously marked as -- is this Kay 24? -- Kay Exhibit 24.  
 2 This was an exhibit marked during his, Dr. Kay's, deposition.  
 3 And, first, if you'll take a look at, I'd like to  
 4 know if you've seen this document before?  
 5 A. If I didn't see it yesterday, I don't think I  
 6 have. I saw a lot of documents yesterday and this might  
 7 have been one of them, but I don't remember.  
 8 Q. Okay. For your information, this particular  
 9 declaration was filed in connection with a refutation of  
 10 arguments made by opposers in the European patent office to  
 11 the European McCafferty application. Did all that make  
 12 sense to you?  
 13 A. Yes. Yes, it does.  
 14 Q. All right. What I'd like you to do is please read  
 15 -- and you're welcome to read any part of this you want, but  
 16 I would like you to read paragraphs 13 through 17, which  
 17 concern your -- well, paragraph 16 gets to your grant  
 18 application. And, basically, when doing that, I'm going to  
 19 want to know if there's anything in Dr. Kay's declaration  
 20 you would disagree with,  
 21 MR. HARTH: I'm going to object to the extent  
 22 you're asking the witness to offer an expert opinion.  
 23 If the request is, are there any factual  
 24 matters that are incorrect, I don't have a problem with  
 25 that. If the question is, do you have an opinion that is in

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1 opposition to the opinions expressed by Dr. Kay, I would  
 2 object to that.  
 3 BY MR. VEZEAU:  
 4 Q. So you understand my question, I would like to  
 5 know if there are any statements made by Dr. Kay that you  
 6 disagree with in paragraphs 13 through the end?  
 7 MR. HARTH: Including statements of opinion?  
 8 MR. VEZEAU: David you stated your objection,  
 9 period. If you have an objection, state it.  
 10 MR. HARTH: I'm asking you to clarify. If  
 11 you don't want to do that, that's your choice.  
 12 MR. VEZEAU: I said all statements.  
 13 MR. HARTH: Including opinions?  
 14 MR. VEZEAU: I'm not going to sit here and  
 15 debate with you.  
 16 MR. HARTH: I'm asking you, sir.  
 17 MR. VEZEAU: I view these as statements,  
 18 period.  
 19 MR. HARTH: I'm asking you, sir.  
 20 (Witness is reading.)  
 21 BY MR. VEZEAU:  
 22 A. I think these -- these statements are all about  
 23 opinions. I'm not sure if there is anything factual that's  
 24 at issue here. So you're really asking my -- whether this  
 25 reflected my own opinion now or then?

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1 Could you be a little more specific of what it is  
 2 you're asking me to comment on here.  
 3 Q. Sure.  
 4 A. I mean...  
 5 MR. HARTH: I'll also object on grounds of  
 6 multiplicity. If there are particular statements, as you  
 7 like to call them, that you'd like Dr. Smith to comment on,  
 8 I suggest that you call his attention to those statements  
 9 rather than six or seven paragraphs containing probably  
 10 seventy or eighty different statements.  
 11 MR. VEZEAU: Are you through? That, again,  
 12 is a speaking -- it's not an objection; it's a brief.  
 13 And I'd ask you once again, David, to please  
 14 cut it out because I have a limited amount of time and I  
 15 want to get through with this witness. So please stop.  
 16 BY MR. VEZEAU:  
 17 Q. Let me ask it this way. Do you know -- do you  
 18 have any reason to believe that Dr. Smith -- I'm sorry. Let  
 19 me try that once more.  
 20 Do you have any reason to believe that Dr. Kay is  
 21 not a truthful man?  
 22 A. No, I have no reason to believe that at all.  
 23 Q. Okay. Do you -- I'll withdraw that partial  
 24 question.  
 25 Now, MorphoSys apparently sent to you MorphoSys

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1 arguments made to the European opposition division in  
2 connection with the McCafferty application. Do you recall  
3 that correspondence from Mr. Harth?

4 A. Yes, I remember receiving those arguments.

5 Q. I'm sorry.

6 A. Go ahead.

7 Q. Okay. Did you ever receive from MorphoSys the  
8 decision of the European opposition division in connection  
9 with the European McCafferty --

10 A. I don't know if I received that decision.

11 Q. Did you ask for it?

12 A. I don't think I asked for it.

13 MR. VEZEAU: I'll ask the reporter to mark  
14 for identification as Defendant's Deposition Exhibit 319  
15 documents produced from the files of MorphoSys bearing  
16 production numbers M11705 and 11706.

17 (DEFENDANT'S DEPOSITION EXHIBIT NO. 319 WAS  
18 MARKED FOR IDENTIFICATION BY THE REPORTER.)

19

20 BY MR. VEZEAU:

21 Q. Dr. Smith, I'm going to hand you deposition  
22 Exhibit 319 and ask you to take a look at it and then  
23 basically verify that this is a letter that you prepared.

24 A. Yes.

25 Q. You refer in the first sentence to your having

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1 been approached by numerous colleagues. Who were the  
2 colleagues, other than Dr. Virmekas?

3 A. I would have a hard time saying who, specifically.

4 Q. Do you believe there was anyone else other than  
5 MorphoSys at that time?

6 A. I'm afraid I don't know, actually. I'll just have  
7 to plead lack of recall. I guess there were enough  
8 inquiries that prompted me to write this letter, sort of a  
9 form letter.

10 Q. Now, with this form letter, you say, "To this end  
11 I enclose copies of two grant proposals submitted to NIH."  
12 Do you see that?

13 A. Yes.

14 Q. Is this the first time you can recall sending out  
15 copies of these grant proposals to anybody requesting it?

16 A. Oh, no, I'm sure I sent the grant proposal to  
17 other people. But I would have -- I wouldn't be able to  
18 tell you specifically who, just on my own.

19 Q. Do you have any records that show that?

20 A. No, not that I have found. I guess not that you  
21 found in those files.

22 Q. Do you have any recollection of who you sent them  
23 to or when you sent them?

24 A. I'm afraid I don't. You mean this -- these --  
25 under this cover letter, you're talking about?

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1 Q. Whether under this cover letter or a different  
2 cover letter.

3 A. I don't. I sent some proposal to -- I know I sent  
4 one proposal to Bob Ladner. And that would have been pretty  
5 -- that would have been early in the nineties, I'm sure.  
6 And I don't remember which one it would be, actually --

7 Q. Okay.

8 A. -- whether it was the one that I submitted in '87  
9 or the one I submitted at the end of 1988.

10 Q. You state in the fourth paragraph that, "As you'll  
11 see if you read the account, it's very hard for anyone,  
12 including me, to take serious credit for the 'invention' of  
13 anything in this field!" Do you see that?

14 A. Uh-huh. Yes.

15 Q. Now, you indeed were pursuing, though, a patent  
16 along with Enzon to attempt to obtain coverage, broad  
17 coverage, that would encompass the display of SC antibodies,  
18 single-chain antibodies, on living organisms; isn't that  
19 correct?

20 A. That's correct.

21 Q. Do you recall in the document you produced  
22 yesterday --

23 A. Is --

24 Q. -- which was a draft patent application that you  
25 were working on with Enzon, that you made numerous suggested

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1 changes to that draft application?

2 A. So this was the draft that we are withholding,  
3 that--

4 Q. Yes.

5 A. -- Mr. Hoskins has?

6 Q. Yes.

7 A. And I enumerated --

8 Q. The pages.

9 A. -- the pages on which those amendments or those  
10 suggested editings were done, yes.

11 Q. And one of the pages you enumerated was page 40.  
12 I don't know if you remember that?

13 A. (Shrugging.)

14 Q. But do you recall striking reference to the  
15 McCafferty paper on page 40?

16 A. I can't remember.

17 Q. Okay.

18 A. All I did while I was -- I haven't looked at that  
19 in many years. And I was just paging through those and just  
20 noting the pages where they were marked. That's all I did  
21 while I was glancing through those.

22 Q. Who is Mats Persson?

23 A. He's a scientist. I'm afraid I don't know his  
24 affiliation.

25 Q. Karolinska?

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1 A. Karolinska Institute in Sweden.

2 Q. Stockholm.

3 A. And he was someone that was involved in display of  
4 protein domains on living organisms. I mean, he sort of was  
5 in that general field and interested in that general field.

6 Q. Let me ask you, you've use the term "domain"  
7 throughout your testimony here today. What do you mean by  
8 the term "domain"?

9 A. Well, domain in proteins means a part, a subpart,  
10 of the protein, not the entire protein, that folds up and  
11 can act pretty much autonomously apart from the other parts  
12 of the protein.

13 THE REPORTER: Excuse me. Pretty much on...?

14 THE WITNESS: Autonomously apart from other  
15 parts of the protein..

16 A. So, for example, an antibody as it's usually made  
17 has two so-called Fab domains that are about a third of the  
18 antibody each, and each of them is able to bind to antigen.  
19 And then there is another domain called the Fc domain. And  
20 each of them can be sort of separated from the others and  
21 retain its structure and some of its functions.

22 Q. Have you used the term domain in connection with  
23 peptides?

24 A. Have we ourselves, for my own publications? I  
25 can't remember using -- talking about that except -- yes,

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1 very recent publications have talked about peptides that can  
2 form self-sufficient domains, sub-domains.

3 Q. Candidly, I thought you used that term this  
4 morning when the topic was peptides. And that's the only  
5 reason I asked it because I thought -- I had a different  
6 impression what domains were. So I'm wondering how you use  
7 that term.

8 MR. HARTH: Well, I'm going to object to  
9 counsel's speeches about his understanding of the testimony.

10 MR. VEZEAU: Fine.

11 MR. HARTH: What is the question?

12 MR. VEZEAU: You heard the question.

13 Would you please read it back?

14 THE WITNESS: I was --

15 MR. VEZEAU: Could you read the question  
16 back?

17 BY MR. VEZEAU:

18 Q. Let me ask it this way. Is that term used loosely  
19 by you or very strictly by you in your discussions?

20 A. I was using it loosely in that context. And I  
21 would use it much more strictly when the confirmation of a  
22 complex displayed peptide was at issue. So I was using it  
23 loosely in that -- when I was talking about peptides.

24 MR. VEZEAU: I'm going to ask the reporter to  
25 mark for identification as Defendant's Deposition Exhibit

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1 320 documents produced in this litigation.

2 (DEFENDANT'S DEPOSITION EXHIBIT NO. 320 WAS  
3 MARKED FOR IDENTIFICATION BY MR. VEZEAU.)

5 BY MR. VEZEAU:

6 Q. You certainly saw this yesterday; is that correct?

7 A. Yeah. From Mats Persson, yeah.

8 Q. Now, do you recall the phone conversation referred  
9 to on the third page of this exhibit?

10 A. No, I am afraid I don't recall it.

11 Q. Now, in the second paragraph on the third page, to  
12 see if I can refresh your recollection, I want to read this  
13 portion of that paragraph:

14 "GPS admires (sic) Ladner and is positive that he  
15 independently and early on had the ideas presented in the  
16 patent. Still, GPS opposes the principle that biotechnology  
17 patents can be issued without having to reduce the ideas to  
18 practice: Ladner had the idea but chose the wrong phage - it  
19 would not have worked, and only by adding things to the...  
20 application did it end up having sufficient substance."

21 Does that accurately reflect your view as of that  
22 time frame, 1997?

23 A. Yes, I think that -- that's my -- how shall I put

24 it? -- my majority opinion. I don't think I'm always

25 consistent, but that would be -- that would certainly be the

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1 way I would usually -- the opinion I'd usually have on this  
2 subject.

3 Q. Now, the Ladner referred to in the patent -- or  
4 the original application, what, if any, relationship did  
5 that have to the application in which you were named as a  
6 co-inventor?

7 A. Well, I believe that the application that I was  
8 added to as a co-inventor derived from that original Ladner  
9 patent. That certainly is my understanding.

10 Q. And is -- now, you indicate -- well the statement  
11 is made that "only by adding things to the original  
12 application did it end up having sufficient substance." Do  
13 you recall what was added to the original application?

14 A. Well, that would be by citing other people's work  
15 that reduced -- that could arguably be said to reduce the --  
16 Ladner's idea to practice. And that would also refer to my  
17 own work.

18 Q. Your work on what?

19 A. On single-chain antibodies displayed on  
20 filamentous phage. The work with the anti-fluorescein  
21 antibody.

22 Q. And that's the work in the lab books that were  
23 lost in the mail?

24 A. Yes.

25 Q. What do you mean by "reduced to practice" in your

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1 last answer? And if you'd like, we'll have the reporter  
2 read it back.  
3 MR. HARTH: Would you read it back, please.  
4 MR. VEZEAU: Yeah.  
5 THE REPORTER: I'm sorry, what am I reading  
6 back?  
7 MR. VEZEAU: Just his last answer.  
8 THE REPORTER: His last answer?  
9 MR. VEZEAU: Yeah. Please.  
10 (The reporter read the answer as follows:  
11 "ANSWER: On single-chain antibodies  
12 displayed on filamentous phage. The work with  
13 anti-fluorescein antibodies.")  
14 MR. VEZEAU: I think there's --  
15 THE REPORTER: Did I read that correctly?  
16 MR. VEZEAU: Yeah, that was fine, but there's  
17 more that preceded that, I think. It's a longer answer.  
18 THE REPORTER: I'm sorry. The answer that  
19 preceded that was:  
20 "ANSWER: Well, that would be by citing other  
21 people's work that reduced -- that could arguably be said to  
22 reduce the -- Ladner's idea to practice. And that would  
23 also refer to my own work."  
24 BY MR. VEZEAU:  
25 Q. Yeah. And that's what I was wondering, what you

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1 meant by that term "reduced to practice" as you used it?  
2 A. In that context, Ladner put forth the general idea  
3 of displaying foreign things like single-chain antibodies on  
4 living organisms, and he would include phage and other  
5 viruses in that context.  
6 But he didn't propose -- he didn't cite any actual  
7 experiments showing that that could be accomplished. So  
8 reduction to practice in this -- what I meant by reduction  
9 to practice was doing an actual experiment that showed, in  
10 principle at least, that this display could be accomplished.  
11 Q. (Nodding head.) Now I'd like to direct your  
12 attention further down to -- on this page where it states,  
13 "GPS has gone through his date books from 1988, but has no  
14 record or memory of any public appearance, or publishing any  
15 text, during this time at which he may have presented his  
16 ideas."  
17 Do you know to what that is referring?  
18 A. Give me a second.  
19 Well -- any public appearance, or publicizing any  
20 text, during this time at which he may have presented his  
21 ideas.  
22 Looking at that, it looks like I meant that I  
23 didn't go to a meeting, like a public meeting. But I did  
24 make visits in 1988, as you well know. So I guess that's  
25 what I meant there.

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1 And "presented his ideas," this must mean -- be  
2 referring to the idea of what I call the epitope library  
3 because I wouldn't, certainly, have been presenting any  
4 ideas concerning phage antibodies in 1988.  
5 Q. GPS -- the next statement: "GPS would support an  
6 opposition solely on the grounds to oppose the fact that the  
7 ideas had not been reduced to practice; he is not willing to  
8 personally support an opposition based on other aspects."  
9 Do you know what opposition is being referred to  
10 here?  
11 A. You know, I'm afraid I don't. I don't know what  
12 opposition. This might be an opposition to a Ladner patent  
13 is my guess because Ladner -- and that's probably what Mats  
14 was asking me about. This is a communication from Mats  
15 Persson to Cambridge Antibody Technology?  
16 Q. Sean Walton, who is outside British counsel for  
17 Cambridge Antibody.  
18 A. Uh-huh. Well, I don't recall the conversation  
19 with Mats and I -- my guess would be about the Ladner patent  
20 on, you know, most aspects of phage display. He has an  
21 issued patent in the U.S., and I don't know about in Europe,  
22 that broadly covers display of things on filamentous phage.  
23 But certainly nothing -- Ladner can't touch  
24 single-chain antibodies. When he left the company, he had  
25 to sign some kind of --

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1 THE REPORTER: When he left the company...?  
2 THE WITNESS: He had to sign some kind of  
3 undertaking not to deal with single-chain antibodies. At  
4 least, that's my understanding.  
5 BY MR. VEZEAU:  
6 Q. Do you know with -- under the Genex agreement, in  
7 connection with the provision of the single-chain antibody  
8 from Genex to the University of Missouri and to you, you  
9 were obligated to report any significant research results in  
10 connection with that single-chain antibody? And that's  
11 report back to Genex?  
12 A. I believe I was.  
13 Q. Okay. Did you do so?  
14 A. I believe I did. I'd have a hard time documenting  
15 that, though.  
16 Q. Did you see anything in the files that you  
17 produced for us yesterday along that line?  
18 A. You know, I didn't look at those files and I  
19 haven't looked at them for years.  
20 Q. All right.  
21 (Mr. Vezeau and Ms. Choi conferring out of  
22 the hearing of the reporter.)  
23 MR. VEZEAU: We can take a minute or two  
24 breather.  
25 (Off the record.)

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<p>1 2 MR. HARMON: Back on record. 3 MR. VEZEAU: I'm going to ask the reporter to 4 mark for identification another document from your files 5 that you produced here yesterday. And this will be 6 Defendant's Deposition Exhibit 321. 7 (DEFENDANT'S DEPOSITION EXHIBIT NO. 321 WAS 8 MARKED FOR IDENTIFICATION BY MR. VEZEAU.) 9 10 BY MR. VEZEAU: 11 Q. I'll hand that exhibit to you, Dr. Smith, and ask 12 you to review it and tell us what that is, if you can. 13 A. Well, it's obviously a review of the Breitling, et 14 al., paper, also after McCafferty, et al., displaying 15 antibodies on phage. 16 I'm pretty sure that I didn't write this review. 17 And someone sent it to me, I would guess, asking for 18 comments. 19 Q. Okay. Do you know, there are a bunch of letters 20 on here and a bunch of numbers, handwritten. Do you know 21 what they mean? 22 A. That's typical doodling, so I don't think they 23 mean anything. 24 Q. Is that your writing? 25 A. Yes, that's my writing.</p> <p style="text-align: center;">177</p>	<p>1 whether in hard copy or electronic form? 2 A. Not that I know of. I can look in my files -- 3 Q. Okay. 4 A. -- but I don't think I've found anything to that 5 effect in the e-mail files. 6 Q. Have you had any discussions with Dr. Barbas 7 concerning either the Griffiths patent or the McCafferty 8 patent? 9 A. Again, not that I can remember. 10 Q. The same question with respect to Dr. Burton, have 11 you had -- 12 A. Dennis Burton? 13 Q. Yes. 14 A. Again, I can't remember talking to him about that 15 subject. 16 Q. Okay. Have you had any discussions with Dr. 17 Von Ruden or correspondence with Dr. Von Ruden in connection 18 with either the McCafferty or Griffiths patents? 19 A. Von Ruden, R-u-u-d-e-n? 20 Q. R-u-d-e-n. 21 A. I can't remember him, even. 22 Q. All right. 23 A. I'm sorry. 24 Q. Okay. 25 A. So I don't --</p> <p style="text-align: center;">179</p>
<p>1 Q. Okay. So you did see this, apparently, at one 2 stage. And do you believe you reviewed it? 3 A. Yes, I think I looked at this. 4 Q. Okay. But you don't recall -- do I understand 5 from your testimony you don't recall who sent this to you? 6 A. No, I don't. 7 Q. Okay. 8 MR. VEZEAU: Okay, let's take about a 9 five-minute break. And I'm going to try to wrap up rather 10 promptly. 11 (Recess.) 12 13 MR. HARMON: Back on record. 14 BY MR. VEZEAU: 15 Q. Have you, Dr. Smith, met with Dr. Pluckthun? 16 A. I've seen him at numerous meetings, yes -- 17 Q. Okay. Have you had -- 18 A. -- several meetings. 19 Q. -- any discussions with him concerning the 20 McCafferty patent or the Griffiths patent? 21 A. I don't recall whether I've talked to him about 22 that subject. 23 Q. Do you know -- 24 A. I can't remember. 25 Q. Do you know if you've corresponded with him,</p> <p style="text-align: center;">178</p>	<p>1 Q. Do you remember, have you ever met Simon Moroney? 2 A. Simon Moroney? Again, I can't remember. 3 Q. Do you know if you've had any correspondence with 4 him? 5 A. Not that I remember. 6 (Mr. Vezeau and Ms. Choi conferring out of 7 the hearing of the reporter.) 8 Q. As you sit here today, Dr. Smith, do you recall 9 precisely what you said at the April 1990 Banbury Conference 10 in your 15-minute presentation? 11 A. Precisely? 12 Q. Yes. 13 A. You mean word for word? 14 Q. Yes. 15 A. No, of course not. 16 Q. Did you ever make a library of single-chain 17 antibodies displayed on phage? 18 A. No. 19 MR. VEZEAU: Dr. Smith, my turn is over. 20 It's now Mr. Harth's turn to ask you some more questions, so 21 listen up! 22 MR. HARTH: I only have a few. 23 24 RE-EXAMINATION BY MR. HARTH: 25 Q. Dr. Smith, did Mats Persson inform you that he had</p> <p style="text-align: center;">180</p>

1 been asked by the attorney for Cambridge Antibody Technology  
2 to seek out your views?

3 MR. VEZEAU: Objection, lack of foundation.

4 BY MR. HARTH:

5 A. I don't remember.

6 Q. Did you know that Dr. Persson was in  
7 communications with Sean Walton, the attorney for Cambridge?

8 A. I don't know now whether I knew it. I might or  
9 might not at the time. I didn't -- I don't know.

10 Q. All right. Did you know that Dr. Brian Kay was a  
11 paid expert for CAT?

12 A. When are you asking when I knew that?

13 Q. At any time. Before today, but did you know that?

14 A. I -- it didn't register with me before today. If  
15 I knew it, I had forgot it.

16 Q. All right. In your "Dear Colleague" letter of June  
17 27, 1997, Exhibit 319, at the bottom of the page -- actually  
18 on the second page you say that "I believe that Banbury has  
19 a rule that talks given there are to be considered, quote,  
20 personal communications, unquote." What does that mean?

21 A. That means that if you write a paper, you can't  
22 cite a talk at a Banbury Conference as a reference. For  
23 example, it must be cited as personal communication. And  
24 for personal communication, of course, you have to have the  
25 permission of the communicator.

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1 Q. All right. Are you aware of any rule or custom  
2 followed by the organizers of the Banbury Conference that  
3 prohibits participants from discussing the substance of the  
4 meetings with people who weren't there? I.e., could you go  
5 and tell Dr. Scott when you got back what happened, or would  
6 you be violating the rules?

7 A. I don't think I would be violating the rules, not  
8 that I was aware of, anyway. I don't think there are any  
9 such statements. I doubt it.

10 Q. Mr. Verzeau showed you a memo by a David Chiswell  
11 which is an account of a conversation he had with you at the  
12 Banbury Conference. The first sentence says that George  
13 Smith privately is candid that he had tried and failed to  
14 put a single chain from Genex into gene III in 1988-89. Do  
15 you see that?

16 A. Yes.

17 Q. Did you have a single-chain Fv from Genex in  
18 either 1988 or 1989?

19 A. No. I think the meaning, his meaning, there was  
20 not -- is not expressed by the words. But I think what he  
21 meant was that I tried to get the gene in '88-'89, Genex  
22 wasn't very helpful. And then, in addition, when I finally  
23 did get it, I tried to display and wasn't very successful,  
24 in my eyes.

25 Q. All right. And you say wasn't very successful in

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1 your eyes. What do you mean by that?

2 A. The single-chain antibody could be displayed on  
3 the surface of the phage. I think we demonstrated that.  
4 But its binding specificity was rather marginal, to our  
5 interpretation. It performed -- the discrimination in a  
6 tight control was about a hundredfold. Discrimination  
7 between specific and nonspecific finding was about a  
8 hundredfold, and we were used to discriminations in the  
9 epitope library clones in the order of a millionfold. So we  
10 considered a hundredfold as quite marginal performance.

11 And we also regarded -- the single-chain antibody  
12 that we displayed did reduce the yield of phage and the  
13 infectivity of the phage. So the phage -- as phage, the  
14 phage performed less well than wild-type phage or phage  
15 displaying a short peptide.

16 Q. But you did, in fact, display the antiluorescein  
17 antibody on phage as you reported to the NIH in your  
18 progress report?

19 A. Yes.

20 Q. Are the pink sheets that you get from the NIH  
21 reviewers available to the public, to your knowledge?

22 A. No, I think not. You can get the study section  
23 composition, but you can't get the comments.

24 Q. All right.

25 (SMITH DEPOSITION EXHIBIT NO. 23 WAS MARKED

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1 FOR IDENTIFICATION BY THE REPORTER.)

2  
3 BY MR. HARTH:

4 Q. Let me show you what we've marked as Smith  
5 Deposition Exhibit 23.

6 A. Okay.

7 Q. This is a -- on its face, at least, a fax message  
8 to you from David Chiswell, dated July 21, '95. Do you see  
9 that?

10 A. Yes.

11 Q. Do you have a recollection of Dr. Chiswell asking  
12 you to provide an expert opinion for an auction in the  
13 European patent office?

14 A. I'm afraid I do not recall. Actually must have --  
15 I think he was at a meeting in Italy earlier that summer  
16 that I was at. I do not remember what I replied to this.  
17 Well, I'm pretty sure I would have replied that I wasn't --  
18 wouldn't act as a witness on their side.

19 Q. All right. Do you have any recollection of, in  
20 fact, acting as a witness on CAT's side?

21 A. No, I didn't. I didn't. I would have remembered  
22 that.

23 (SMITH DEPOSITION EXHIBIT NO. 24 WAS MARKED  
24 FOR IDENTIFICATION BY THE REPORTER.)

25

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<p>1 BY MR. VEZEAU:</p> <p>2 Q. Showing you Smith Exhibit 24 --</p> <p>3 MR. VEZEAU: May we see that?</p> <p>4 MR. HARTH: Yes. It's in your pile.</p> <p>5 Q. Before you go through that, do you know what</p> <p>6 position the patent office took with respect to the</p> <p>7 statements that you made in your declaration?</p> <p>8 A. Which declaration are we talking about?</p> <p>9 Q. We're talking about the declaration in connection</p> <p>10 with the --</p> <p>11 A. Ladner 87?</p> <p>12 Q. Yes, that Mr. Verzeau was asking you about. And I</p> <p>13 think it's Defendant's Exhibit 317.</p> <p>14 A. Well, this patent was denied and ultimately</p> <p>15 abandoned. And I'm afraid I do not know where in the</p> <p>16 chronology this comes. So I -- the patent was denied and</p> <p>17 the Goldstein -- I mean, Stern, et al., and Enzon didn't</p> <p>18 ultimately abandon the patent.</p> <p>19 Q. Do you recall ever receiving a copy of Smith</p> <p>20 Deposition Exhibit 24, an office action, following your</p> <p>21 submission of your declaration?</p> <p>22 A. So this is their action, is that --</p> <p>23 Q. Says "office action" on the front page. And I'll</p> <p>24 represent to you that this comes from your files.</p> <p>25 A. Okay. So, obviously, I received it. But I -- so</p> <p style="text-align: center;">185</p>	<p>1</p> <p>2 MR. HARMON: Back on record.</p> <p>3 MR. VEZEAU: Dr. Smith, thank you for your</p> <p>4 kindness both yesterday and today. And for your patience</p> <p>5 here today. It's been a long day. We do thank you, though.</p> <p>6 THE WITNESS: You're welcome.</p> <p>7 MR. HARTH: Thank you.</p> <p>8</p> <p>9 (Defendant's Deposition Exhibits Nos. 313</p> <p>10 through 321 were re-marked for identification by the</p> <p>11 reporter.)</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20 (Signature on next page.)</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: center;">187</p>
<p>1 I received it, yes.</p> <p>2 Q. Do you have any recollection of reviewing it or</p> <p>3 what it says?</p> <p>4 A. I don't.</p> <p>5 Q. All right. Mr. Verzeau asked you about a fax that</p> <p>6 I sent you, DDX 315, which has a multi-page submission</p> <p>7 attached in connection with the opposition proceedings in</p> <p>8 the European patent office on the McCafferty patent. Simple</p> <p>9 question: Did you ever read this document?</p> <p>10 A. I read parts of it, yes, I did.</p> <p>11 Q. Now, you mentioned in your earlier testimony that</p> <p>12 you had offered the attorneys for CAT the opportunity to</p> <p>13 meet with you privately yesterday?</p> <p>14 A. Yes.</p> <p>15 Q. Did they take you up on that offer?</p> <p>16 A. Yes.</p> <p>17 Q. Did you meet yesterday with Mr. Verzeau and Ms.</p> <p>18 Choi and Mr. Clough?</p> <p>19 A. Yes.</p> <p>20 Q. How long did that meeting last?</p> <p>21 A. A little bit less than two hours.</p> <p>22 MR. HARTH: That's all I have. Thank you.</p> <p>23 MR. VEZEAU: Just one second. You're almost</p> <p>24 free.</p> <p>25 (Off the record.)</p> <p style="text-align: center;">186</p>	<p>1 DEPONENT: George P. Smith, pH.D.</p> <p>2 VENUE/CASE NO.: U.S. District Court Case No. 1:00CV00146</p> <p>3 DATE: May 14, 2002</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12 George P. Smith, pH.D.</p> <p>13</p> <p>14 Subscribed and sworn to before me this _____</p> <p>15 day of _____, 2002.</p> <p>16 My commission expires _____.</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21 Notary Public, State of Missouri</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: center;">188</p>



1 CERTIFICATE  
2 STATE OF MISSOURI )  
3 ) ss  
4 COUNTY OF COLE )

5 I, Sally Bredeman Harmon, Certified Court Reporter  
6 of the firm of Bredeman & Associates, Inc., a Notary Public  
7 of the State of Missouri, commissioned in Cole County, do  
8 hereby certify that pursuant to agreement there came before  
9 me on May 14, 2002,

10 George P. Smith, pH.D.,

11 at the offices of Davis, Susan & Holder, in the City of  
12 Columbia, County of Boone, who was first sworn by me to  
13 testify the whole truth of his knowledge concerning the  
14 matter in controversy aforesaid; that he was examined, and  
15 his examination then and there was written in machine  
16 shorthand by me and afterwards transcribed by computer-aided  
17 transcription and is fully and correctly set forth in the  
18 foregoing 188 pages; that the reading and signing of this  
19 deposition was requested by counsel and the witness; and  
20 this deposition is herewith returned.

21 I further certify that I am neither attorney or  
22 counsel for, nor related to, nor employed by any of the  
23 parties to this action in which this deposition is taken;  
24 and further that I am not a relative or employee of any  
25 attorney or counsel employed by the parties hereto, or  
financially interested in this action.

Given at my office in the City of Jefferson City,  
County of Cole, State of Missouri, this 16th day of May,  
2002.

My Commission expires February 26, 2005.

Sally Bredeman Harmon, CCR  
Notary Public, State of Missouri  
Commissioned in Cole County

189

1 COURT MEMO  
2 IN THE U. S. DISTRICT COURT  
3 FOR THE DISTRICT OF WASHINGTON, D.C.  
4 MORPHOSYS AG, )  
5 Plaintiff, )  
6 vs. ) Case No. 1:00CV00146  
7 )  
8 CAMBRIDGE ANTIBODY TECHNOLOGY, LTD., )  
9 Defendant. )

10 CERTIFICATE OF OFFICER & STATEMENT OF COSTS INCURRED

11 DEPONENT: George P. Smith, pH.D.  
12 (taken on behalf of Plaintiff)

13 DATE OF DEPOSITION: May 14, 2002

14 CUSTODIAN OF THE  
15 ORIGINAL TRANSCRIPT: David J. Harth  
16 1666 K Street, NW, Suite 300  
17 Washington, D.C. 20006

18 TAXED IN FAVOR OF:

19 PLAINTIFF, represented by David J. Harth:  
20 Appearance, original and one copy of transcript,  
21 jurat, index, ascii disk, signature, videotaping,  
22 delivery,

23 Total.....\$  
24 DEFENDANT, represented by Timothy J. Vezeau:  
25 Copy of transcript, condensed copy, index,  
ascii disk, copy of videotape, delivery,  
Total.....\$

PAYMENT OF CHARGES:

Upon delivery of transcripts, the above charges had not  
yet been paid. It is anticipated that all charges will  
be paid in the normal course of business.

IN AFFIRMATION THEREOF, I have hereunto set my hand on  
this 16th day of May, 2002.

Sally Bredeman Harmon  
BREDEMAN & ASSOCIATES, INC.  
527 East High Street (P.O. Box 866)  
Jefferson City, MO 65101 (65102-0866)

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## All-Word Index

Deposition of: George P. Smith, Ph.D. (05/14/02)

*It's been a pleasure to be of service to you!*

**BREDEMAN & ASSOCIATES, INC.**

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